SELF-DIRECTED LEARNING READINESS OF NURSING STUDENTS IN THEIR FOURTH YEAR OF STUDY IN A PUBLIC NURSING COLLEGE IN JOHANNESBURG, GAUTENG PROVINCE, SOUTH AFRICA

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DECLARATION

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ABSTRACT

Background: Self-directed learning (SDL) is an essential skill for effective continuing professional development (CPD) to keep abreast of the rapid changes in nursing and nursing education. Nursing education aims at empowering students in training with the enquiry skills necessary for self-directed learning to render up-to-date and relevant health care and to become lifelong learners. The level of readiness for self-directed learning by nursing students graduating from the public nursing college is however not known.

Research aim: The aim of the study was to determine the level of readiness for self-directed learning of fourth-year nursing students at a public nursing college in Gauteng Province.

Objectives: The objective of the study was to measure the level of motivation of fourth-year nursing students for self-management, their desire for learning and their level of self-control to determine their level of readiness for self-directed learning.

Design: A quantitative approach was applied using the logical research process to gather quantifiable evidence. The study design was a descriptive survey. Convenience sampling, a non-probability sampling method, was utilized.

Fisher's self-directed learning readiness (SDLR) scale for nurses was used to collect data. Such data included participants' demographic characteristics, as well as their self-management, readiness to learn and self-control subscales. Fisher's SDLR was tested for validity and reliability, with a Chronbach's alpha of 0.98.

Research Setting: The study was conducted at a public nursing college in Gauteng Province, responsible for the education and training of nursing students in the four-year diploma programme leading to registration as a Nurse (General, Psychiatric and Community) and Midwife according to South African Nursing Council (SANC) Regulation 425 (1985). The students attended classes in the college through a block system and were placed in the hospital units and community health centres for clinical experiential learning. In the fourth year of study the students are engaged with the Psychiatric and Community courses.

Population and Sampling: The participants were fourth-year nursing students in a public nursing college. The total number of nursing students was 94 (N=94). Ten (n=10) participated in the pilot study. The results of the pilot study were discussed separately and were not included in the results of the main study. Eighty-four fourth-year students were invited to participate in the study, excluding the ten students who had participated in the pilot study. Sixty-three participants

(n=63), accounting for a 75 percent response rate, completed the self-rating, self-directed learning readiness Likert scale. The students constituted a mixed group of 55 female and eight males, with a mean age of 29.

The data was analysed using inferential and descriptive statistics with the IBM Social Sciences Product for Statistics (SPSS) version 24, 2016.

The results disclosed a high level of SDL among the fourth-year students with 87.3 percent of the students achieving scores higher than 150: according to Fisher a score of 150-200 suggests adequate readiness for self-directed learning (2001:520). However 14.7 percent of students showed low levels of SDL. The demographic characteristics of the participants were statistically not significant as determinants of SDL readiness.

Conclusion: The majority of the fourth-year students displayed an adequate level of readiness for self-directed learning. The nurse educators could encourage an enquiry-based approach to teaching and learning to inculcate a positive approach towards SDL for lifelong learning and effective engagement in continuing professional development.

Key words: self-directed learning, self-directed learning readiness, lifelong learning, nursing students, and continuing professional development.

OPSOMMING

Agtergrond: Selfrigtende leer (SRL) is ’n noodsaaklike vaardigheid vir doeltreffende voortgesette professionele ontwikkeling om op die hoogte te bly van die snel veranderinge in verpleging en verpleegopvoeding. Verpleegopvoeding is gemik op die bemagtiging van studente deur hulle op te lei in die ondersoekvaardighede wat nodig is vir SRL om die nuutste en toepaslikste gesondheidsorg te bied en lewenslange leerders te word. Die gereedheidsvlak vir SRL onder studentverpleërs wat aan publieke verpleegkolleges gradueer, is egter nie bekend nie.

Navorsingsdoel: Die doel van hierdie studie was om die gereedheidsvlak vir SRL van vierdejaarstudente by ’n publieke verpleegkollege in die Gauteng-provinsie te bepaal, deur die motivering van vierdejaarstudente vir selfbestuur, begeerte na leer en vlak van selfbeheer te meet.

Doelstelling: Die doelstelling van die studie was om die gereedheidsvlak vir SRL by ’n publieke verpleegkollege te bepaal deur die motivering van vierdejaarstudente vir selfbestuur, begeerte na leer en vlak van selfbeheer te meet.

Ontwerp: ’n Kwantitatiewe benadering was gebruik in ’n logiese navorsingsproses om versyferbare bewyse in te samel. Die studie-ontwerp was ’n beskrywende opname. Gerieflikheidsteekproefneming, ’n niewaarskynlikheid-steekproefnemingsmetode, is gebruik.

Fisher se selfrigtende leergereedheidskaal (SDLR) vir verpleërs was gebruik om data in te samel. Hierdie data het ingesluit die deelnemers se demografiese eienskappe, asook subskale rakende selfbestuur, gereedheid om te leer en selfbeheer. Fisher se SDLR is vir geldigheid en betroubaarheid getoets, en het ’n Chronbach-alpha van 0.98 gelewer.

Navorsingsomgewing: Die studie is by ’n publieke verpleegkollege in die Gauteng-provinsie uitgevoer, wat verantwoordelik is vir die onderrig en opleiding van studentverpleërs in ’n vierjaar-diplomaprogram, wat lei tot registrasie as ’n verpleër (Algemeen, Psigiatrie en Gemeenskap) en Vroedvrou ingevolge Suid Afrikaanse Raad op Verpleging (SARV) regulasie 425 (1985). Die kollege is op ’n hospitaalperseel geleë, waar die vierdejaarstudente vir kliniese ervaringsleer geplaas word. Die studente woon klasse by die kollege op grond van ’n blokstelsel by en word in hospitaaleenhede en gemeenskapsgesondheidsentra vir kliniese ervaringsleer geplaas. In die vierde studiejaar neem die studente psigiatrie- en gemeenskapskursusse.

Populasie en steekproefneming: Die deelnemers was vierdejaar-verpleegstudente by ’n publieke verpleegkollege. Die totale getal was 94 (N=94). Tien (n=10) studente het aan die

loodsstudie deelgeneem. Die resultate van die loodsstudie is afsonderlik bespreek en is nie by die resultate van die hoofstudie ingesluit nie. Vier en tagtig vierdejaarstudente is genooi om aan die navorsingsprojek deel te neem, insluitende die tien studente wat aan die loodsstudie deelgeneem het. Drie en sestig deelnemers (n=63), wat 'n 75 persent-responskoers verteenwoordig, het die selfbeoordelende, selfrigtende leergereedheid-Likertskaal voltooi. Die studente het uit 'n gemengde groep van 55 vroue en 8 manstudente bestaan, met 'n gemiddelde ouderdom van 29 jaar.

Die data is met inferensiële en beskrywende statistiek ontleed met behulp van die IBM Statistical Package for the Social Sciences- (SPSS-) program, weergawe 24, 2016.

Die resultate het 'n hoë vlak van SRL onder die vierdejaarstudente getoon, met 87.3% van die studente wat tellings bo 150 behaal het. Volgens Fisher toon 'n telling van 150 tot 200 voldoende gereedheid vir SRL. Uit die deelnemers het 14.7 persent egter lae vlakke van SRL getoon. Die demografiese eienskappe van die deelnemers was statisties onbeduidend as bepalers van SRL-gereedheid.

Gevolgtrekking: Die meerderheid vierdejaarstudente het 'n voldoende gereedheidsvlak vir SRL getoon. Verpleegopvoeders kan 'n ondersoekgebaseerde benadering tot onderrig en leer aanmoedig om 'n positiewe benadering tot SRL vir lewenslange leer en doeltreffende betrokkenheid by voortgesette professionele ontwikkeling in te skerp.

Sleutelwoorde: selfrigtende leer, gereedheid vir selfrigtende leer, lewenslange leer, student verpleegkundiges, voortgesette professionele ontwikkeling

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ABBREVIATIONS

ANOVA	Analysis of variance
CPD	Continuing professional development
GPNC	Gauteng public nursing colleges
LL	Lifelong learning
NEI	Nursing education institution
SA	South Africa/African
SANC	South African Nursing Council
SASDLRS	Self-administered self-directed learning readiness scale
SDL	Self-directed learning
SSDL	Staged self-directed learning
SDLRS	Self-directed learning readiness scale

CHAPTER 1
FOUNDATION OF THE STUDY

1.1 INTRODUCTION

Self-directed learning (SDL) for lifelong learning is an essential attribute for professional nurses. The rapidly developing healthcare system presents nurse practitioners with a significant challenge to keep abreast by absorbing new knowledge to maintain professional competence, enhance their professional growth and provision of quality patient care (Shen, Chen & Hu, 2014:1).

Professional development in nursing demands the acquisition of skills that promote continuing and lifelong learning outside the formal education programme for the purpose of keeping well-informed with new knowledge and skills applying to professional nursing practice (Murad, Coto-Yglesias, Varkey, Prokop & Murad, 2010:1057; Williams & Brown, 2013:431). Self-directed learning is one such vital skill identified as crucial for students and nursing practitioners (van Rensburg & Botma, 2015:2).

According to Malcolm Knowles, self-directed learning is the mechanism by which a person—with or without the help of others—identifies his/her learning needs, sets goals to address these learning needs, determines the human and non-human resources, implements strategies to address these learning needs and evaluates his knowledge (Knowles, 1975:18). Knowles forecast that self-directed learning would be vital for humans to survive in the world of innovation (Prabjandee & Inthachot, 2013:2). SDL is associated with benefits related to an improved quality of nursing practice and professional development and an opportunity for knowledge expansion for nursing students with critical thinking, sound decision-making, achievement satisfaction, enthusiasm, competence and self-reliance enhanced (Shen *et al.,* 2014:2).

Encouraging nursing students to become self-directed and lifelong learners is highlighted as an important goal of nursing education (Qamata-Mtshali, 2012:7). The curriculum in use at Gauteng nursing colleges states that the goals of the diploma in nursing programme are to cultivate professional skills, management skills and abilities related to continuing professional development (Gauteng Nursing Colleges, 2002:5).

Students' ability to engage effectively in SDL is referred to as Readiness for SDL (Wiley, 1983:182 cited in Fisher & King, 2010:44).

Students' readiness for self-directed learning is influenced by the role of the facilitator of learning, the facilitation process, the facilitator-student relationship, a student's readiness to learn, willingness to take responsibility and the degree of motivation within students (Huang, 2008:6). The teaching methods being utilized need to encourage active participation to promote the skills of self-directed learning.

The Problem-Based Learning (PBL) approach to teaching and learning process endeavours to prepare students with the fundamental skills and attitudes required for self-directed lifelong learning (Malan, Ndlovu & Engelbrecht, 2014:2). PBL proposes that the learning environment and the learning process should focus on a student-centred approach, assuming that students bring their experience, perceptions and various learning styles to a dynamic, active learning process (Qamata-Mtshali, 2012:15).

Lecturing has the advantage of being able to cover a larger content for a greater number of students. However the lecture and the lecturers frequently do not provide for student participation. Consequently the majority of students take comfort in the lecturer doing the greater proportion of the work. This approach fosters dependence on the lecturer and student passiveness (Schmidt, Wagener, Smeets, Keemink & van der Molen, 2015:13)

While content remains significant, the focus should be on learning as an active process to encourage enquiry, thus helping students to become self-directed and life-long learners (Emenyeonu, 2012:245)

Focus differs in the various teaching approaches by Gauteng Public Nursing Colleges (GPNC), which emphasize the transmission of factual knowledge with minimal focus on teaching students how to learn as active participants, for self-directed lifelong learning (Sithole: 2011:24).

While self-directed learning is an innate potential skill utilized by human beings to various degrees throughout their lives when faced with challenging and new situations, the potential varies from person to person (Prabjandee *et al.,* 2013:1). Self-directed learning readiness instruments seek to measure the individual's level of self-directed learning readiness (Soliman & Shaikh, 2014:800)

Studies undertaken in different developed and developing countries show various levels of self-directed learning readiness among nursing students. However, no studies have been conducted in GPNCs to determine the nursing students' level of readiness for self-directed learning.

1.2 SIGNIFICANCE OF THE PROBLEM

Internationally, nursing education institutions are entrusted with the responsibility of encouraging self-directed lifelong learning in their future graduates, however, implementation of strategies that foster the achievement of SDL skills is not always evident (Guglielmino, 2013:10). While lecturers utilize a variety of teaching strategies, some methods are used to a greater degree than others, with the lecture method remaining the most-favoured teaching strategy (Sithole, 2011:93).

The lecture method encourages student passiveness, increasing dependence on the lecturers to impart factual knowledge rather than being actively involved in the learning process. Questions remain about the readiness of prospective professional nurses to undertake self-directed learning at the end of the four-year programme.

1.3 RATIONALE

Observation of the teaching-learning process in Gauteng nursing colleges shows that this is dominated mostly by lecture methods, from which it may be assumed that the nursing education programmes do not adequately prepare nursing students for active lifelong learning. PBL challenges students to take on a greater responsibility in the process of learning. This paradigm shift involves engaging with the problem rather than content coverage: lecturing shifts to facilitation with students as active problem-solvers rather than mere passive learners (Malan, *et al.,* 2014:5).

It is important to assist nursing students to become self-directed learners, during their training, to prepare them for the real world in order to become lifelong learners. The rationale for conducting this study was to determine the student nurses' readiness for self-directed learning in a teaching and learning environment where there is minimal emphasis on the inquiry skills that should be preparing them for self-directed learning that enables lifelong learning.

1.4 RESEARCH PROBLEM

According to the approved revised curriculum document for Gauteng Nursing Colleges (2002), Outcomes-Based Education (OBE) and Problem-Based Learning (PBL) are the underpinning approaches for the education and training of student nurses. According to these a student-centred approach and active participation should be promoted. Here the principles differ significantly from traditional teaching methods, which are teacher-centred and encourage student passivity. Nurse educators to some extent utilize a variety of teaching strategies, making an effort to challenge the students to become active participants. The problem is that the lecture method is still the most-utilized teaching strategy, which allows for passive students

rather than encouraging active student involvement in the learning process. Course content, delivered through lecture-based methods, may be a good preparation for content tests. However it fails to prepare students for self-directed lifelong learning. The course content changes constantly, and the ability to adapt, apply, update and identify new learning needs becomes crucial for nursing students (Douglass & Morris, 2014:20).

1.5 RESEARCH QUESTION

What is the level of readiness for self-directed learning of the fourth-year nursing students at a public nursing college in the Gauteng Province?

1.6 RESEARCH AIM

The aim of this study is to determine the level of readiness for self-directed learning of the fourth-year nursing students at a public nursing college in the Gauteng province.

1.7 RESEARCH OBJECTIVE

The objective of the study is to measure the fourth-year nursing students' level of motivation for self-management, their desire for learning and their level of self-control to determine their level of readiness for self-directed learning.

1.8 CONCEPTUAL FRAMEWORK

Malcolm Knowles presented assumptions and characteristics indicating that adult learners are internally motivated and ready to learn to satisfy the desire to accomplish their life goals (Knowles, 1975:23). Recognition that learning is a lifelong and continuing process is characteristic of a self-directed learner who is accountable and responsible for his or her learning (Prabjandee *et al.,* 2013:2). Knowles, Holton and Swanson (2011:5) suggested that the adult learner possesses a positive self-concept and a readiness to learn that develops through maturity to address social and professional role responsibilities.

Knowles' Five-Step Self-direction Model (Knowles, 1975)

The model of self-direction is the original work by Malcolm Knowles and the primary source upon which the study is based. The instrument that will be used incorporates the components of the model in the constructs of the instrument. These constructs serve as the theoretical base upon which the instrument measures the level of readiness for self-directed learning. The model will be incorporated when discussing the results.

The model addresses the following aspect of the self-directed learning process of which nurse educators should be aware and so encourage students to develop, through the appropriate methods of facilitation, during the teaching and learning process.

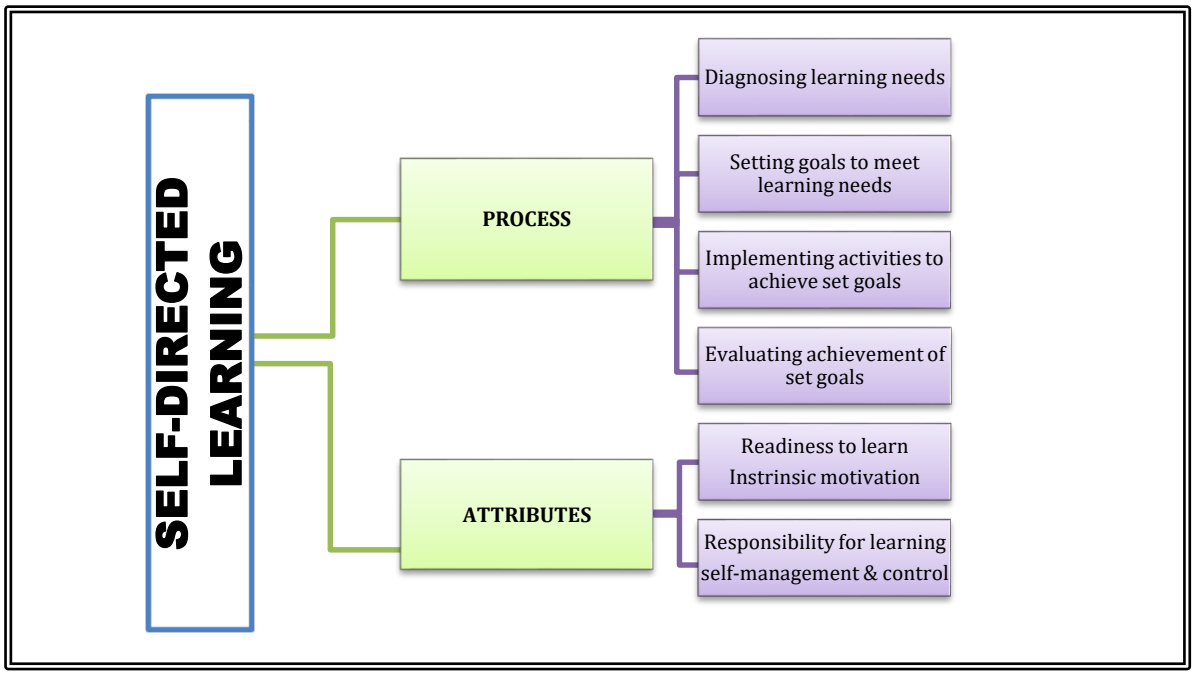

Figure 1.1: Conceptual framework: Self-directed learning model adapted from Knowles' Five-Step self-direction model of 1975

Knowles (1975) outlined the following five steps of the Self-Directed Model:

1. **Diagnosing learning needs**

Students engage in the determination of their learning gaps and needs in relation to programme outcomes.

2. **Formulating learning goals**

In order to address the learning needs identified, students need to set realistic, specific, achievable, results-based and measureable goals that they seek to attain to improve their learning within a specific time frame.

3. **Identifying human and material resources for learning**

This involves consultation with facilitators, colleagues, clinical experts, librarians and bookstores to identify resources that are useful, to address the set goals.

4. **Choosing and implementing appropriate learning strategies**

The students make decisions about how they will learn what they need to learn, utilizing strategies such as focused reading, mind mapping, reflection and study groups.

5. **Evaluating learning outcomes.**

The students utilize concrete evidence to determine the effectiveness of learning against set goals.

1.9 RESEARCH METHODOLOGY

Research methodology refers to the plan or process the researcher will utilize while following logical steps to conduct the research (Grove, Burns & Gray, 2013:707). In this section the details regarding the specific steps of the research methodology will be described, with the aim of determining the level of readiness for self-directed learning of the fourth-year students at a public nursing college in Gauteng Province.

1.9.1 Research Paradigm

A research paradigm refers to a specific worldview or belief regarding a phenomenon (Grove, *et al.,* 2013:702). The assumptions of the positivist approach focus on research as being actual and objective with the researcher maintaining minimal interaction with research participants (Wilson, 2010:10).

A positivist approach is the philosophical underpinning of this study. A questionnaire is utilized as a data collection instrument to generate quantifiable research findings leading to statistical analysis, consistent with the quantitative approach (Collins, 2011:38).

1.9.2 Research design

A quantitative descriptive approach was applied using the logical research process to gather quantifiable evidence. The study design was a descriptive survey. Such a design would enable collection and measurement of data on the study variables, with no follow-up on data collected from participants. No intervention or manipulation of variables was applied. Descriptive analyses and generation of hypotheses would be possible.

1.9.3 Study setting

The pilot study and the research study were conducted at a public nursing college within the hospital where the nursing college is located. The college is one of the three nursing colleges in the Gauteng Province that offer the four-year diploma leading to registration as a Nurse (General, Psychiatric and Community) and Midwife according to the SANC regulation 425 of 22 February 1985 as amended. The students were gathered in an auditorium, within the hospital premises. Permission was obtained from the college principal and the facilitators to address the students. To ensure confidentiality and privacy for the institution, it will be referred to as a public nursing college in Gauteng (RSA, 2015:17).

1.9.4 Population and sampling

The fourth-year students registered in the four-year diploma programme in Nursing (General, Psychiatric and Community) and Midwifery, R.425 of 22 February 1985 as amended, were chosen as the study population. Qualifying students would be registered with the SANC as professional nurses. The programme aimed to prepare them to achieve graduate attributes to be self-directed learners for life-long. Professional nurses are expected to effectively engage in CPD to keep abreast with changes in clinical practice, maintain their competencies to provide relevant care. To successfully engage in CPD self-directed learning skills are crucial. The fourth year nursing students were thus chosen as the study population.

There were 94 (N=94) students of mixed gender and various age groups within the fourth year of study at the college, forming the total population to which the researcher had access. Ten (n=10) participated in the pilot through convenience sampling. Eighty-four students were invited to participate in the research study. Sixty-three (n=63) consented and completed the questionnaire accounting for a 75 percent response rate.

Convenience sampling, a non-probability method was the chosen sampling method. The sampling method was deemed appropriate for the study as it was cost-effective and allowed data collection from population members who were available to participate in the study. The students present in the auditorium on the day of data collection made up the study sample. Inviting all students to participate has the potential to increase the sample size and thus reduce sample size errors.

1.9.5 Data collection tool / Instrumentation

The self-directed learning readiness scale (SDLRS) is a validated questionnaire, in English, that was developed by Fisher, King & Tague, (2001:516). In this study the instrument was not translated, as the formal teaching language at the nursing colleges is English.

The instrument consisted of 40 items grouped under three subscales, namely: self-management (13 items); desire for learning (12 items) and self-control (15 items) (Fisher, *et al.,* 2001:520).

The fourth-year students responded by means of a 5-point Likert scale that ranged from 5 for “strongly agrees” to 1 for “strongly disagrees”. Overall scores could range from 40 to 200, where the higher scores reflect a stronger readiness for self-directed learning. A score greater than 150 represent a high level of readiness for SDL whereas scores less than or equal to 150 indicate a low level of readiness for SDL (Fisher, *et al.,* 2001:520; Yuan, Williams, Fang & Pang, 2012:428).

Written permission was granted to utilize the validated 40-item self-administered instrument from the faculty of Nursing and Midwifery: University of Sydney, Australia. The tool was piloted unchanged within a South African context.

The scale was deemed suitable for this study as it had been developed to assist nurse educators in diagnosing a student's self-directed learning needs, for the implementation of appropriate teaching strategies that would match with the students' readiness for SDL.

The questionnaire is attached as Appendix 4 and consists of two sections:

Section A consists of questions on the participants' biographical data. The biographical data is considered to potentially influence self-directed learning readiness.

Age

Studies conducted on the relationship of age and self-directed learning readiness present varying results. According to the study conducted by Williams, Boyle, Winship, Brightwell Devenish & Munro (2013), it was concluded that SDL readiness increases with age. However, in the study of Gilany & Abusaad (2012) it was reported that majority (77%) of students possessed level of readiness for SDL that was high not influenced by students' demographics.

Gender

According to Huang (2013), it is suggested that North American and European female students displayed inadequate academic self-efficacy than men. Yahya and Javad (2014) reported statistically significant differences between male and female students with regard to written performance. In a study conducted on the school performance of children and adolescents, the results supported that females performed substantially better than males with regard to writing and reading (Diniz, Piccolo, Couto, Salles, & Koller, 2014).

In a South African study focusing on the academic self-efficacy of students in a technology teacher programme with electricity as the subject, the female students were found to possess lower levels of self-efficacy (Mackay & Parkinson, 2008). The study found that female students were culturally discouraged to participate in science-related subjects. However, the male students were encouraged culturally to participate in such subjects (Mackay & Parkinson, 2008).

Dependants

According to Knowles, (1975), individual differences among people increase with psycho-cultural differences, with experience as the richest source for adults' learning. Nursing students' in the colleges include those who are directly from high school and those who return to study after a period of time spent in other pursuits, bringing varying life roles and experiences into nursing training. Parents who partake in promoting self-directed learning of their dependent children develop their own self-directed learning in the process (Morin: 2017).

In a study conducted by Vanaga & Rutka (2014) it can be concluded that the promotion of the child's initiative and self-direction is not only dependent on parental skills, but also on the parental interest and capacity to take initiative for learning. Life experiences related to life roles could affect self-directed learning readiness (Smedley, 2007:384)

Qualifications

Participants who held post-graduate qualifications showed lesser scores for self-management than those who held diploma qualifications. The scores in desire for learning were the highest in students who held bachelor's degree. The study findings suggest that universities should not assume that SDL capability is dependent on length of exposure to tertiary study (Phillips, Turnbull & Flora, 2015).

Section B consists of a five-point Likert scale of items reflecting the constructs that address the subscales concerning the readiness for self-directed learning of nursing students (Fisher, *et al*., 2010:46).

1.9.6 Pilot test of the questionnaire

A pilot study is small-scale version of the research study to test for validity and reliability. During pilot testing the clarity of the questions (as relevant to the content of the instrument) is determined, as well as the procedures necessary to refine the instrument. The pilot test of the questionnaire was undertaken with 10 percent of all the fourth-year students (n=10). The sampling method was convenience sampling.

1.9.7 Reliability and Validity

1.9.7.1 Reliability

In quantitative research reliability indicates the consistency of the instrument in measuring the concept assessed, in this study self-directed learning. The instrument was developed and tested for validity by Fisher and colleagues with undergraduate nursing students in Australia. The values of the Cronbach's alpha coefficient suggested adequate internal consistency reliability scores of the subscales, with self-management scores of 0.924, desire to learn, 0.857 and self control with a score of 0.830 (Fisher *et al.,* 2010:46; Yuan *et al.,* 2012:428).

1.9.7.2 Validity

Validity of an instrument refers to the extent to which the instrument measures the concept it is supposed to measure, self-directed learning in this study. The instrument utilised in the study is an existing validated instrument (Fisher *et.al.,* 2001:522).

1.9.8 Data collection

Data collection for the research study was conducted at the end of the students' fourth year of study. The students were in an auditorium for the year-end address and career guidance. The researcher using the information sheet explained details of the study and the instrument. The researcher, assisted by the event facilitator, a student counsellor in the college and two members of the Student Representative Council (SRC), distributed the information sheet, with a consent form attached, and the questionnaire. Voluntary consent for participation was obtained. The students completed the questionnaire independently within 20 minutes. The instruments, completed or uncompleted, were deposited in a box from which the instrument could not be retrieved once deposited. The researcher collected the instruments immediately after.

1.9.9 Data analysis

Data was entered into Microsoft Excel, imported and then analysed using a statistical analysing program, IBM SPSS (version 24). The Biostatistics Unit at the Faculty of Medicine and Health Sciences at Stellenbosch University assisted the researcher with statistical analysis. The level of self-directed learning readiness was described using numbers as well as frequencies and was compared to students' demographic characteristics. Descriptive statistics were used to describe the data and the statistical tests such as Chi-square (categorical demographic variables) and t-tests (continuous variables) were used to test for relationships between variables.

1.10 ETHICAL CONSIDERATIONS

A request for approval to conduct the study was made to the Health Research Ethics Committee (HREC) at Stellenbosch University (Ethics Reference #: S16/03/049) and this approval was given. The researcher observed the relevant ethical principles according to the Declaration of Helsinki, which provides for the protection of research participants and the guidelines on Ethics in Health Research in South Africa (RSA: 2015).

1.10.1 Right to self-determination

The right to self-determination supports the ethical principle of respect for people, such that participants' willingness to participate in this study was voluntary, and they could withdraw from the study voluntarily (Grove *et al.,* 2013:178; RSA, 2015:22).

1.10.2 Right to confidentiality and anonymity

Confidentiality and anonymity support the participant's right to privacy of information. The use of coded instruments and non-disclosure of the names of all participants in the study ensured confidentiality. Providing a sealed envelope to return the data collection instrument to the respondent ensured anonymity and the participants were advised to return the instrument, without including their names. To ensure confidentiality and privacy the institution was referred to as a public nursing college (Grove *et al.,* 2013:172; RSA, 2015:19).

The researcher, the statistician and the researcher's supervisor would have access to the collected data. All questionnaires will be kept in a locked cabinet for at least five years. The researcher and supervisor would have access to the specific electronic information by using a protected password.

1.10.3 Right to protection from discomfort and harm

Students are a sensitive group and as such were informed beforehand about the purpose of the study, in accordance with the ethics in health research guidelines (RSA, 2015:16). Participants suffered no harm, whether physical or psychological, from participating in this study (Grove, *et al.,* 2013:174:RSA.2015:16). Data obtained was utilised exclusively for the research purpose. Contact details of the researcher, the supervisor and the Health Sciences Research Council are included in the consent form to enable participants to clarify concerns they might have and ensure adherence to the principle of doing good and causing no harm.

1.10.4 Right to informed consent

Adequate information about the study was provided to potential participants to enable them to make an informed decision about participation (Grove *et al.,* 2013:176). Participants were issued an information sheet giving details of the study in simple English. The researcher was available to clarify and answer questions as relevant. Participation in the study was voluntary, and no one was coerced to participate. Respondents were also informed that they allowed to withdraw from the study at any time without disadvantage in accordance with the ethics in health research guidelines (2015:16).

Consent was obtained from:

- The principal of the nursing college to conduct the pilot and the research studies;
- The Gauteng Department of Health (GDoH) to conduct the pilot and the research study, as public nursing colleges are institutes under the governance of the GDoH; according to the ethics in health research guidelines (RSA, 2015:22).

The results of the study were presented honestly to maintain the principle of veracity. The research findings would be communicated to the principal of nursing college, the Gauteng Department of Health, Gauteng Department of Health Nursing and Midwifery Directorate, as appreciation for participating (De Vos, Strydom, Fouche & Delport, 2011:136).

1.11 OPERATIONAL DEFINITIONS

In this study the following operational concepts are here defined:

- **Self-directed learning (SDL)**

SDL refers to students' interest and motivation in the direction of taking responsibility for searching for knowledge and practising skills while continuing to do so actively beyond the physical and temporal dimensions of the traditional classroom.

- **Readiness for self-directed learning**

The learners' readiness to engage in SDL refers to the degree to which the students possess the abilities, attitudes and personality characteristics necessary for self-directed learning (Wiley, 1983:182 cited in Fisher *et al*., 2010:44).

- **Continuing professional development (CPD)**

A range of formal, non-formal and informal learning activities through which professional nurses maintain competence and develop throughout their careers to ensure that they retain their capacity for safe, effective and legal practice within their dynamic scope of practice. (Armstrong, Bhengu, Kotze, Nkonzo-Mthembu, Ricks, Stellenberg, van Rooyen & Vasuthevan, 2013:106).

- **Nursing**

Nursing means a caring profession practised by a person registered under Section 31, which supports, cares for and treats a health care user to achieve or maintain health and where this is not possible, cares for a health care user so that he or she lives in comfort and with dignity until death according to the Nursing Act (SANC, 2005:6).

- **Nursing College**

The term refers to a public nursing education institution (NEI) in the Gauteng Province health department, accredited by the South African Nursing Council (SANC) to offer nursing programmes, in association with a university (Bruce & Klopper, 2010:494).

- **Adult learner**

A person involved in formal education at a tertiary institution or college who is aged 18 years or more and is pursuing an undergraduate or postgraduate programme.

1.12 DURATION OF THE STUDY

Ethics approval was obtained on 26 August 2016. Data collection was conducted on 9 December 2016 for the pilot study and on 11 December 2016 for the research study. Data analysis was completed in September 2017. The final thesis was submitted for examination in November 2017.

1.13 CHAPTER OUTLINE

Chapter 1: Foundation of the study

The background to the study is highlighted, including the overview of the research process.

Chapter 2: Literature review

A comprehensive literature review related to the study is presented.

Chapter 3: Research methodology

The research methods and procedures used to achieve the aim and objective of the study are discussed in detail.

Chapter 4: Results

The findings are presented using tables, figures and graphs in relation to answering the research question.

Chapter 5: Discussion, conclusions and recommendations

Discussions of the results, conclusions about the research question and recommendations for future research are highlighted.

1.14 SIGNIFICANCE OF THE STUDY

The results of this study could provide research evidence on the level of readiness for self-directed learning in the fourth year of study and also demographic characteristics influencing self-directed learning. Nurse educators could then plan strategies and activities tailored to support and improve students' self-directed learning readiness for lifelong learning.

1.15 SUMMARY

The ability of nurse graduates to engage successfully in continuing professional development requires them to take responsibility for their learning, exercise self-control and exhibit the motivation to learn so as to maintain competence in accordance with the provisions of the Nursing Act. Readiness for SDL is an individualized characteristic, which explains the variations in degrees along the scale. The readiness for self-directed learning of students should be measured to assist nurse educators to support and improve the students' readiness for self-directed learning through facilitation strategies that encourage active enquiry for lifelong learning.

1.16 CONCLUSION

Self-directed learning skills are necessary for nursing students in training to prepare them for independent and lifelong learning through continuing professional development. Nurse educators are tasked with preparing nursing students to acquire the skills necessary to become self-directed learners. The findings of this study could help nurse educators to assist students acquire strategies to develop the skills and characteristics of self-control, self-management and desire for learning application in educational and clinical practice settings.

Throughout the study, the relevant ethical principles were upheld to protect the rights of participants.

The next chapter, Chapter 2, will provide a literature review, which incorporates related research studies, key definitions and terminology relevant to this study.

CHAPTER 2
LITERATURE REVIEW

2.1 INTRODUCTION

This chapter provides a broad analysis of the nature and significance of SDL and the measurement thereof in relation to nursing education and training. A summary and critical analysis of currently available research are presented to support the rationale for conducting this investigation.

A literature review was conducted using major key words and phrases such as "*self-directed learning", "nursing students", "lifelong learning" and "readiness for self-directed learning"*. Data bases such as Science Direct, PUBMED and Medscape were reviewed. Google Scholar, related textbooks and the International Society for Self-directed Learning Publications were reviewed. Articles sought were ranging from the historical era of self-directed learning including those that had been published in the five years since 2012 for recent information. Relevant information was sourced from international studies, including studies from South Africa ranging form 1975 to 2016. The historical perspective of SDL was explored through literature by historical authors, such as Malcolm Knowles, the father of Andragogy and one of the pioneer authors in self-directed learning. The literature reviewed is presented below.

Changes and innovations in technology, science, disease profile and healthcare occur at a rapid pace globally. These changes warrant a change in nurses' personal growth to meet the demands (Huang, 2008:12).

The health status in South Africa is characterised by sub-optimal outcomes that impact negatively on the country's economic development and healthcare expenditure. Progress towards meeting the Sustainable Development Goals (SDGs) is noted, however the inherent challenges in an effort to meet the MDG goals are significant (Report on millennium developmental goal in South Africa: 2013:2).

Nurse practitioners are obligated to respond to the current millennium employment requisites where progression in career should be managed autonomously through innovation and creativity, in the identification and resolution of work-specific problems. Successful studying, management of careers and relevance in employment warrant self-directedness (Botha & Cotzee: 2016:12).

For nurses to be responsive to the ideals of the South African Nursing Council they need to be lifelong learners who engage in continuing professional development (CPD) (Murad, *et al*., 2010:1057). Effective engagement in CPD requires readiness, preparedness, motivation and the skills necessary for self-directed learning. Nursing education institutions providing programmes for nurse training have a responsibility to ensure that students graduating from their programmes are self-directed learners (Huang, 2008:5).

Self-directed learning (SDL), also referred to as autonomous learning, independent learning, self-direction in learning, self-instructed learning, self-regulated learning, self-planned learning, self-managed learning and self-education, places emphasis on shifting the focus from a teacher-centred to a student-centred approach, with the student taking responsibility and initiative for his learning (Hiemstra, 2013:24).

There has been a greater focus on SDL in nursing education with recognition of SDL as one of the teaching strategies (Klunklin: 2010:7). It offers nurse educators an alternative to the traditional teaching methods, in response to the changes in the development of the nursing profession (El-Gilany *et al.,* 2012:1043). SDL is utilized in undergraduate and postgraduate nursing programmes to encourage lifelong learning (Fisher, *et al.,* 2010:45).

In a study conducted in Taiwan on student nurses, the qualitative and quantitative methods were utilized in exploring the experiences of students with the introduction of self-directed learner activities. The results suggested a recognition and appreciation of the change from traditional teaching to a participative student-centred learning approach. The facilitation process, learning resources and student-teacher interactions were highlighted as important factors influencing self-directed learning (Huang, 2008:15).

Learning theories describe active and passive learning approaches. Self-directed learning is categorized as an active learning approach based on the principles of adult learning (Qamata-Mtshali, 2012:34).

Students attending public nursing colleges are adult learners engaging in higher education programmes and as such are required to be responsible for their own learning. SDL is a process where students are responsible for identifying their own learning needs, with or without guidance from others, deciding on goals for learning, choice of human and material resources, implementing appropriate learning strategies and evaluating learning outcomes (Knowles, 1975:18; Cheng, Kuo, Lin & Lee-Hseih, 2010:1152).

Self-directed learning does not mean isolated learning. The approach can be used within a structured curriculum where time can be made available for students to decide on their learning requirements and the resources they require to achieve such requirements, in and out of the classroom (Timmins, 2008:22).

Problem-based learning (PBL)—widely applied in higher education institutions—implements the self-directed learning approach for problem solving regarding the trigger materials based on real-life situations. The introduction of PBL into a basic programme can improve self-directed learning skills in students and set in motion a process of advancement towards lifelong learning (Malan, *et al.,* 2014:3).

The literature review findings are presented in regard to the following:

2.1 Defining self-directed learning
2.2 Self-directed learning readiness;
2.3 Measuring self-directed learning;
2.4 Importance of self-directed learning; and
2.5 Factors that may affect the students' self-directed learning potential.

2.2 DEFINING SELF-DIRECTED LEARNING

SDL is considered to be a method or process of learning that is influenced by the personality traits unique to individuals (Knowles, 1975:18; Cazan & Schiopca, 2014:641; Goede, 2012:1058; Lee & Yuan, 2010:56). According to Knowles (1975:18; Hiemstra; 1992:327; Saxon, 2013:16) the self-directed learner prefers to take responsibility for his or her own learning needs. However self-directed learners do not necessarily learn in isolation. The learning process involves consultation with the lecturers who assume the role of facilitators. A lecture-based teaching and learning process is structured to include both lectures and tutorials. The identification of learning needs, formulating goals, planning and implementing the learning activities and evaluating learning is dependent on the lecturer. This approach encourages students' dependence on the lecturer (Sithole, 2011:23).

2.3 SELF-DIRECTED LEARNING READINESS

Self-directed learning readiness (SDLR) is defined as the degree to which an individual possesses the attitudes, abilities and personality characteristics necessary for self-directed learning (Wiley, 1983 cited in Fisher *et al.,* 2010:44). Knowles *et al.* (2011), proposed that adult learners are intrinsically self-directing with the ability and readiness for SDL existing in individuals, to an extent, along a continuum.

Implementing and encouraging activities that are required for self-direction can assist in developing competencies for self-directed learning. To learn independent behaviour is to behave independently, thus according to the Nursing Act of 2005 (SANC: 2005) nursing education institutions should encourage the direction of behaviour towards self-directed learning during training to transfer the skills of self-directed learning to the practice environment.

Studies of self-directed learning readiness indicated that SDLR was at a high level among 77 percent of nursing students in Saudi Arabia (El-Gilany *et al.,* 2012). However in Pakistan only 23 percent of nursing students scored above average on the SDL readiness scale, with 18 percent being found to be below average and more than 50 percent merely average scorers (Gul, Cassum & Ajani, 2009). A study of pharmacy students at Maryland University in the United States showed a high degree of readiness for self-directed learning (Huynh, 2009). A study conducted in Turkey on the effects of self-directed learning readiness, involving 162 second-grade nursing students, showed that a web-based course positively affected the readiness of students regarding self-directed learning, using Fisher's self-directed learning readiness scale (SDLRS) (Şenyuva & Kaya, 2014).

In a Saudi Arabian study of undergraduate nursing students it is suggested that modern learning approaches increasingly emphasise self-directed learning and self-directed tasks guided through consultation with academics (El-Gilany, *et al.,* 2012). The study was conducted to determine the readiness of Saudi undergraduate nursing students for self-directed learning and to identify their learning styles in order to establish the relation between the two concepts. A cross-sectional descriptive study was undertaken using Fisher's self-administered self-directed learning readiness (SDLR) scale questionnaires, considering the demographic features of students, and Kolb's learning styles inventory (El-Gilany, *et al.,* 2012). The study showed the high level of SDLR and that the dominant converger learning style among undergraduate nursing students might have a positive implication for their education and post-employment continuing nursing education. Similar results were found using the same scale on teachers (Fisher, *et al.,* 2001).

The educator's intention should be to match the learner's stage of self-direction with relevant activities and assist the student to progress to an advanced stage. The educator's purpose should be to address student needs at the level of the student's stage characteristics, for which reason it is necessary to measure the student's readiness for self-directed learning (Grow, 1991:128).

2.4 MEASURING SELF-DIRECTED LEARNING

2.4 MEASURING SELF-DIRECTED LEARNING

Both qualitative and quantitative methods have been used over the years to assess the level of readiness for self-directed learning. A variety of instruments, in the form of self-directed learning readiness scales (SDLRS) have been utilized by researchers: these instruments are mainly self-administered, thus the concept of self-administered self-directed learning readiness scales (SASDLRS). Guglielmino's SDLRS—a Likert scale type of instrument—was commonly used, with academic literature suggesting it was valid and reliable (Guglielmino, 1977). This common usage lasted until the validity of Guglielmino's SDLRS came to be questioned, leading to the development of an alternative scale, the Self-Directed Learning Readiness Scale (Fisher, *et al.,* 2010:44).

The results of a descriptive survey aimed at examining self-directed learning among teachers showed that self-directed learning is at a high level among teachers. Comparing levels of self-directed learning in teachers based on their gender and age differences, no significant variation was found, according to Torabi, Gholamreza and Bahrami (2013: 220). The descriptive survey undertaken by Torabi, *et al.* (2013:221) showed that the Fisher SDLR scale had been tested and found to be valid and reliable.

In a study conducted on undergraduate nursing students in Saudi Arabia to determine the relationship between learning styles and readiness for self-directed learning, no association was found between levels of SDLR and learning styles (El-Gilany, *et al.,* 2012:1043). A study carried out in Thailand suggested that self-directed learning readiness varies across majors and years of study (Prabjandee *et al.,* 2013). The particular merits of these studies were their large population sizes with reduced sample size errors.

2.5 IMPORTANCE OF SELF-DIRECTED LEARNING

Self-directed learning skills are essential for achieving learning outcomes that are meaningful and long lasting. Educators need to be facilitators in helping students cultivate lifelong learning skills (Nantz & Klaf, 2012). SDL is also viewed as an effective mode of learning for college students, since college learning requires that students should be active participants and manage their learning in all learning environments (Cohen, 2012:892). This phenomenon relates to the current study because knowledge about health matters and the nursing profession is always changing. SDL benefits include increased confidence, autonomy, motivation and preparation for lifelong learning, according to Pryce-Miller (2010:22).

2.7 STAGED SELF-DIRECTED LEARNING READINESS

According to Grow's Staged Self-Directed Learning (SSDL) model (1991:128) students may develop from being dependent to becoming self-directed in the SDL continuum. Assessment of students' readiness for self-directed learning is essential to minimize incongruence in SDL-promoting activities and students' abilities (Klunklin, Viseskul, Sripusanapan & Turale, 2010).

The basic principle of the model refers to teaching being situational, where the role of the educators involves matching teaching activities to a student's stage of self-directed learning readiness and to encourage the student to progress over time towards a more developed independence and the ability of self-direction (Grow, 1991:128).

2.8 FACTORS THAT MAY AFFECT THE SELF-DIRECTED LEARNING POTENTIAL OF STUDENTS

Learner motivation is enhanced by behaviour, which leads to learner success reinforcing motivation (Woolcock, Creevy, Coleman, Moore & Brown, 2016:653). Autonomous students who identify deficits in their knowledge and skills are better able to accept the need to close these gaps, thus clear programme structures and outcomes direct the student towards purposeful behaviour. Constant feedback serves as a positive factor in enhancing and promoting commitment to learning (Smedley, 2007:384).

Notwithstanding the benefits of SDL as an empowering process, inadequate students' motivation could affect the successful engagement with SDL as a strategy for teaching and learning. Students who are less keen on being self-directed learners may experience anxiety when involved in projects requiring self-direction, resulting in lowered levels of self-directed learning readiness (Li, An & Li, 2010:1205).

A study carried out in Lalitpur, Nepal, to explore differences in SDL readiness of students, based on their backgrounds and characteristics, indicated that the self-financing students had lower self-directed learning readiness (SDLR) compared to those who were financially supported by the government. Students who were educated in public schools had higher SDLR scores than those educated in private schools. Public schools in Nepal suffered from shortages of teachers and poor infrastructure, and it was thought that the scores of the students from public schools were higher due these students taking greater responsibility for their learning (Shankar, Bajracharya, Jha, Gurung, Ansari & Thapa, 2011:552).

2.9.1 SELF-DIRECTED LEARNING AS A PROCESS

Self-directed learning is a process that happens when the learner become the one who is responsible for the identification of his /her learning needs and develops learning goals while choosing activities and resources that are suitable to meet these learning needs. The identified activities are implemented and the process evaluated for effectiveness in addressing the identified learning needs. In this study the capacity of nursing students to essentially direct their learning and their lives will be determined using the research questionnaire against the background provided through the theoretical framework (Guglielmino, 2013:5). The context of instructional methods and strategies will be considered as a factor that could potentially affect the attitudes and skills required for the process of SDL to be implemented in the public nursing college.

2.9.2 SELF-DIRECTED LEARNING AS AN INNATE ATTRIBUTE OF THE LEARNER

Focussing on SDL as a personal attribute, explore the characteristics the persons exhibit regarding their values, attitudes and abilities which affect the readiness for self-directed learning, with some students preferring a more teacher-directed approach while some could experience high levels of readiness in the continuum (Guglielmino, 2013:3).

A truly self-directed learner, referring to the Delphi survey results, is the learner who displays creativity, independence and consistency in learning; one who handles learning challenges with enthusiasm, self-discipline and intrinsic motivation. Such a learner is ready to learn by utilizing study skills and at the same time displays confidence and the ability to organise time and resources to achieve learning goals (Guglielmino, 2013:5).

The capacity of a learner to display these individual attributes embraces the person's level of readiness for self-directed learning. Innate ability, suggesting the level of readiness for SDL, varies among learners. This study seeks to determine the attributes of nursing students at the end of their fourth year of study in relation to their readiness to become lifelong learners, even though instructional approaches have been mainly lecture-based.

2.10 ASSUMPTIONS ABOUT SELF-DIRECTED LEARNING

Adult learners are assumed to be ready and intrinsically motivated to learn and to address real-life issues. They are assumed to be self-directed learners who possess the characteristics and attributes for self-direction and independent learning, according to Torabi, *et al.* (2013:220). However the level of ability to be a self-directed leaner is not the same in all students, so that even some mature students with previous nursing experience may prefer teacher-directed learning (Alkahtani, 2013:112).

Nurse educators need to guide students towards self-directed learning. Students who are not guided experience anxiety regarding self-directed learning, particularly if the student is not experienced in self-direction, resulting in an increased potential to fail in the efforts of self-directedness (Knowles, 1990:14). Students who are highly self-directed experience successful academic outcomes (Douglass & Morris, 2014:14). Such students are capable of adjusting and controlling their motivation, knowledge and attitudes regarding their academic performance (Kan'an & Osman, 2015:792). These findings suggest that self-directed learning ability can potentially be a predictor of academic achievement.

2.11 SELF-MANAGEMENT AS PART SELF-DIRECTED LEARNING

Self-management as a subscale of self-directed learning readiness focuses on student study and learning skills that involve the capacity to be organised and logical, with the self-discipline to prioritize studies. This includes the ability to exercise metacognition, where students engage at a deep level of enquiry about what needs to be learned to fulfil their learning needs (Qamata-Mtshali, 2012:25).

2.12 DESIRE FOR LEARNING IN SELF-DIRECTED LEARNING

The desire for learning about self-directed learning readiness highlights the personal traits of students as self-directed learners who have the ability to construct knowledge actively.

2.13 SELF-CONTROL IN RELATION TO SELF-DIRECTED LEARNING

The relevant self-control skills include the motivation and ability of the student's goal setting, and seeking and utilizing appropriate resources to address learning needs while taking responsibility for decision-making and evaluation of learning.

2.14 SELF-DIRECTED LEARNING IN THE GAUTENG PUBLIC NURSING CURRICULUM

The four-year diploma leading to registration as a Nurse (General, Psychiatric and Community) and Midwife according to SANC regulation 425 of 22 February 1985 as amended, sets out expectations that the graduating nurse should be able to independently provide safe, competent and professional care with emphasis on the comprehensive primary health care approach.

Knowles (1975) supports the need to incorporate SDL into formal learning. The author suggests that a design for the adult self-directed learning process as starting with the need to create a climate for adult learning, involving learners in the various aspects of planning, designing, implementing and finally assisting in evaluating their learning to promote learner independence and lifelong learning skills.

According to the Gauteng Nursing Colleges: Revised Curriculum for the Diploma in Nursing (General, Psychiatric and Community) and Midwifery, (2002:5), Nurses and midwives are expected to practice professionally with independence in clinical decision-making, case management, community empowerment, supervision of other personnel and to efficiently utilise resources. In order to function at the expected level nurses and midwives are required possess skills for self-directed learning to become lifelong learners (Gauteng Nursing Colleges, 2002: 5).

The curriculum focuses on the Outcomes Bases Education (OBE) approach. The intention is to develop the nursing students competencies to provide safe, competent and professional nursing and midwifery care in a diversified dynamic comprehensive health care system. Their education being driven through an adult based interactive teaching and learning methodology, which encourages self-directed learning for independent lifelong learning skills (Gauteng Nursing Colleges, 2002: 6).

Nursing education is a process whereby learners acquire the knowledge, skills, values and attitudes needed to provide qualifying learners with applied competence and self-directed learning skills as a basis for life long learning (Gauteng Nursing Colleges, 2002: 6). The student nurse as active learner will, by means of effective facilitation of learning, develop the capacity for self-directed learning and lifelong learning within the framework of the critical cross field educational and programme outcomes Gauteng Nursing Colleges, 2002: 7). Against this background the curriculum takes into cognisance the crucial need to develop graduates who will possess skills for self-directed leaning to become lifelong learners.

The findings of a study conducted at three Public Nursing Colleges in the Gauteng Province in South Africa by Sithole (2011:94) lecturers and students indicated that, while a variety of facilitation strategies is utilised, the lecture method is the most utilized teaching strategy with minimal reference to research articles. This is a concern because the lecture allows students to be passive students, depending solely on the lecturers to teach them information, instead of actively involving themselves in the learning process.

In the Sithole study (2011:91), lecturers and students indicated 96% of the lecturers use case-based scenarios and students are mostly involved in brainstorming exercises to develop the students' problem solving skills during facilitation. However, only rarely are the students encouraged to seek information on their own. The students were encouraged to utilise multimedia when given assignments despite the fact that written tests and examinations are always utilized for assessment whilst the case studies, assignments and portfolios are utilised to a limited extent.

According to Shen et.al. (2014:6) SDL is the key factor affecting lifelong learning abilities. Self-directed learning as a component of basic training in nursing programmes is intended to prepare students to be lifelong learners. The teaching and learning process in the nursing education institutions should support self-directed learning endeavours.

2.14 CONCLUSION

The major principles of self-directed learning include: active participation involving a process whereby the student determines his goals and reviews thoughts and feelings, adjusting them as needed. The self-directed learning approach emphasizes that students have the ability to manage their learning. However, self-directed learning can be taught through the various stages of student development, enabling students to become more self-directed. Learning activities are goal-directed and purposeful. A balance between personal and situational variables ensures effective self-directedness to achieve academic success. Self-directed learning allows for a balanced approach of guidance by the facilitator, where the acquisition of content, integrated with self-directed learning, is related to the readiness of the students in a way that will minimise anxiety and enhance motivation.

The methodological approach used in the study will be discussed in detail in Chapter 3.

CHAPTER 3
RESEARCH METHODOLOGY

3.1 INTRODUCTION

The previous chapter considered the literature describing the meaning of self-directed learning as a process and the attributes of learners in the context of andragogy. Several studies highlighted the importance of determining readiness for self-directed learning along with the various stages of readiness, as well as the determinants that could influence the level of readiness for self-directed learning.

This chapter provides an account of the research methodology followed to meet the research aim and objective. It comprises the research setting, research design, population and sampling, methods of data collection and analysis, and the pilot study. The research methodology utilized in this study provided an opportunity to collect quantifiable data, for statistical analysis through a convenience sampling method, to determine the level of self-directed learning readiness of the fourth-year nursing students at a public nursing college.

3.2 RESEARCH QUESTION

What is the level of readiness for self-directed learning of the fourth-year nursing students at a public nursing college in Gauteng Province?

3.3 RESEARCH AIM

The aim of this study is to determine the level of readiness for self-directed learning of the fourth-year nursing students at a public nursing college in Gauteng Province.

3.4 RESEARCH OBJECTIVE

The objective of the study is to measure the fourth-year students' level of motivation for self-management, their desire for learning and their level of self-control to determine their level of readiness for self-directed learning.

3.5 STUDY SETTING

The research project was conducted at a public nursing college in Gauteng Province, following registration and approval of the study in the National Research database. The college is one of the three nursing colleges in Gauteng that offer the four-year diploma leading to registration as a Nurse (General, Psychiatric and Community) and Midwife according to the SANC regulation 425 of 22 February 1985 as amended.

The fourth-year students are senior students at the college. In the fourth year of study, the major courses are Psychiatry and Community Nursing. The theoretical blocks are interspersed with clinical placement. The researcher has never been involved in the teaching or supervision of the fourth-year students. The chosen college is not one where the researcher is currently employed.

3.6 RESEARCH METHODOLOGY

3.6.1 Research Paradigm

A research paradigm refers to a specific worldview or belief regarding a phenomenon (Grove, *et al;* 2013:702). The assumptions of the positivist approach focus on research as being factual and objective with the researcher maintaining minimal interaction with the research participants (Wilson, 2010:10). The belief is that reality can be understood and measured using instruments to collect data with rigour maintained throughout the research process. Statistical analysis is utilized to analyse data and generate results.

A positivist approach is the philosophical underpinning of this study. A questionnaire is utilized as a data collection instrument, to generate quantifiable research findings leading to statistical analysis, consistent with the quantitative approach (Collins, 2011:38).
In this study the positivist research paradigm was applied through the independence of the researcher from the research by maintaining objectivity throughout the research. The researcher maintained minimal interaction with the research participants when the research was conducted, based on the belief that the research was factual and without bias. A questionnaire was used to collect data could be objectively analysed using statistical methods to deduce results.

3.6.2 Research design

A research design is a plan guiding the process of conducting the research study, promoting the maintenance of rigour to minimize error that could compromise the study's validity and findings therein (Grove, *et al;* 2013:214). According to Grove, *et al.* (2013:214) descriptive study designs are intended to gain more understanding of phenomena in their natural occurrence. Descriptive study designs frequently utilize instruments to collect data.

This study implemented a descriptive study design using a survey. The design chosen was deemed suitable for the collection and measurement of data to gain understanding into the readiness for self-directed learning of nursing students, without manipulation of variables or intervention. A questionnaire was utilised in the survey to gather quantifiable evidence. The findings were generated to describe the participants' readiness for self-directed learning.

3.7 POPULATION AND SAMPLING

The population is the set of persons with whom the research question is concerned. The individuals for the study are selected from the population (De Vos, *et al.,* 2011:194).

The fourth-year nursing students registered for the four-year diploma programme in Nursing (General, Psychiatric and Community) and Midwifery, according to Regulation 425 of 22 February 1985 as amended, formed the study population. For fourth-year nursing students to gain registration by the South African Nursing Council they must have met all course requirements according to Regulation 425 and obtain at least a 50 percent pass mark in theory and clinical practice in the fourth-year subjects (Gauteng Nursing Colleges Course Rules, 2003).

There were 94 students of mixed gender and various age groups within the fourth year of study at the public nursing college. All the students were taking the fourth year of study for the first time in 2016. Twelve of the students had previously repeated a year of study before reaching the fourth year. All the students were included in the study, irrespective of any previous repeat of a year of study. Eighty-four (N=84) questionnaires were distributed, 63 (n=63) were completed, accounting for a 75 percent response rate.

According to Grove, *et al.* (2013:351) sampling refers to the selection, from within a broader population, of a group of people who will participate in a study. Convenience sampling is a non-probability sampling method that involves inclusion of conveniently available study participants. The sampling method chosen was suitable for this study in that all the available participants, the fourth-year nursing students, were included to determine their level of self-directed learning readiness to achieve the research purpose and answer the research question. This sampling method was also cost-effective and allowed data collection from available population members.

3.7.1 Inclusion criteria

All fourth-year nursing students in the diploma programme, R.425 in the year 2016 were included. In the 2016 class, all the students were engaged in the fourth-year level of study for the first time, even though 12 of the students had previously repeated a year of study.

3.7.2 Exclusion criteria

In this study, no rationale was identified to exclude any participant who met the inclusion criteria for the study.

3.8 DATA COLLECTION INSTRUMENT

A structured questionnaire with closed-ended questions was utilized to obtain data that would be objective, measurable and statistically testable with minimal interference from the researcher. A questionnaire is a self-reporting data collection tool in a print form intended to obtain written information from research participants (Grove, *et al.,* 2013:425).

The self-directed learning readiness scale (SDLRS) is a questionnaire that was developed by Fisher, *et al.* (2001:521) in English. In this study the instrument was not translated, as the formal teaching language in the nursing colleges is English.

The instrument consisted of 40 items grouped under three subscales, namely: self-management, which suggested the attributes and ability of managing one's own learning (13 items); desire for learning (12 items); and characteristics of self-control or the ability to control one's own learning (15 items) (Fisher, *et al.,* 2001:520; Qamata-Mtshali, 2012:20).

Overall scores could range from 40 to 200, with the higher scores reflecting a stronger readiness for self-directed learning. Mean scores greater than 150 represent a high level of readiness for SDL whereas scores less than or equal to 150 indicate a low level of readiness for SDL (Fisher, *et al.,* 2001; Yuan, *et al.,* 2012).

Statistical analysis suggested that the questions were valid and had a reliability score of 0.898 when the study was carried out in an Australian context (Fisher, *et al.,* 2001; Yuan, *et al.,* 2012).

The faculty of Nursing and Midwifery at the University of Sydney, granted written permission to utilize the validated 40-item self-administered instrument, attached as Appendix 4, with the permission letter to utilize the instrument attached as Appendix 5.

The scale was deemed suitable for this study as it had been developed to assist nurse educators in diagnosing students' self-directed learning needs, for the implementation of appropriate teaching strategies that would match students' readiness for SDL.

The Likert scale data collection instrument rating suggested the following:

1 for "strongly disagree" that the item measures a characteristic of the participant;

2 for "disagree" that the item measures a characteristic of the participant;

3 for "unsure" if the item measures a characteristic of the participant;

4 for "agree" that the item measures a characteristic of the participant; and

5 for "strongly agree" that the item measures a characteristic of the participant.

(SD = strongly disagree, D = disagree, U = unsure, A = agree, SA = strongly agree.)

3.8.1 Section A: The demographic data

Questions one to four of section A required participants to provide biographical data: age in years, gender, dependants and previous qualifications to establish correlation between biographical data and the level of readiness for self-directed learning.

Section B: Subscales with constructs

This section is structured around three sub-scales, related to readiness for self-directed learning, with their respective constructs as illustrated below in Table 3.1.

Table 3.1: The three subscales with related constructs of the SDLRS

B1: Self-management (SM 1-13)	B2: Desire for learning (DL 1-12)	B3: Self-control (SC 1-15)
1. I solve problems using a plan	When presented with a problem I cannot resolve, I ask for assistance	I enjoy learning new information
2. I prioritize my work	I am responsible	I set specific times for my study
3. I do not manage my time well	I like to evaluate what I do	I am self-disciplined
4. I have good management skills	I have high personal expectations	I like to gather the facts before I make a decision
5. I set strict time frames	I have high personal standards	I am disorganised
6. I prefer to plan my own learning	I have high beliefs in my abilities	I am logical
7. I am systematic in my learning	I am aware of my own limitations	I am methodical
8. I am able to focus on a problem	I am confident in my ability to search out information	I evaluate my own performance
9. I need to know why	I do not enjoy studying	I prefer to set my own criteria on which to evaluate my performance
10. I critically evaluate new ideas	I have a need to learn	I am responsible for my own decisions/actions
11. I prefer to set my own learning goals	I enjoy a challenge	I can be trusted to pursue my own learning
12. I learn from my mistakes	I want to learn new information	I can find out information for myself
13. I am open to new ideas		I like to make decisions for myself
14.		I prefer to set my own goals
15.		I am not in control of my life

3.8.1.1 Subscale B1: Self-management

This subscale comprised 13 questions (B1-13) related to self-management, in which the capacity to take responsibility for one's learning, set learning goals, manage time and prioritise interventions to solve problems is assessed (Qamata-Mtshali, 2012:26; Huynh *et.al*., 2009:73).

3.8.1.2 Subscale B2: Desire to learn

This subscale comprised 12 questions (B1-12) focusing on the desire to learn, in which one's intrinsic motivation and willingness to search for information towards learning is assessed (Fisher *et al.,* 2001:522)

3.8.1.3 Subscale B3: Self-control

This subscale comprised 15 questions (B1-15) related to self-control, exploring the individual's capacity for self-regulation and self-discipline, and the organisation for effective and logical decision-making regarding one's learning (Williams *et al.,* 2013:104).

The 40-item questionnaire explores the constructs that describe the characteristics and processes involved in self-directed learning. These refer to the ability of students to take responsibility for the management of their learning activities, their intrinsic motivation for learning and their capacity for self-regulation.

3.9 PILOT STUDY

In Chapter 1 a pilot study was described as a small-scale preliminary research study conducted to test the appropriateness of the data collection instrument. Essential changes are implemented as indicated by the results of the pilot study. Grove, *et al.* (2013:343) suggest that 10 percent of the participants will prove adequate for pilot testing.

The pilot study was conducted on 9 December 2016. The head of the department communicated with the students regarding the researcher's invitation. Twenty students (N=20) accepted the invitation. The researcher met the participants at the end of the 16h00 shift as requested through the college principal and the college head of the Department of Psychiatry where the students were allocated for experiential learning. After an explanation of the information sheet, ten participants volunteered to participate, accounting for the 10 percent accepted population sample required for a pilot study. The other ten participants who chose not to participate were thanked for their time and effort.

The researcher discussed the information sheet with participants and their informed consent was obtained. The option of an English or isiXhosa information sheet and consent form was provided. Participants opted for the English information sheet and consent form. On students' completion of the consent form, the researcher distributed the questionnaire and a sealable envelope. The researcher explained the questionnaire in detail and invited questions, to which the participants expressed understanding.

The questionnaires were independently completed while the researcher waited just outside the room to minimise the Hawthorne effect on participants, where participants could potentially change their behaviour and possibly responses, in response to researcher presence and being part of a study (Grove *et al.,* 2013:38) however, the researcher was within easy reach and was available to clarify participants' questions.

The self-administered five-point Likert scale on self-directed learning readiness for nurses was completed in 20 minutes. The instruments were collected immediately after completion by the researcher in the sealed envelopes. All instruments were returned completed, accounting for a 100 percent return rate.

Participants were invited to comment verbally on the instrument regarding their understanding of the questions and the duration of completion of the questionnaire. They responded that the questions were clear and otherwise had no other comments. The ten fourth-year students who participated in the pilot study were not included in the formal research study.

The participants' original data was plotted on an MS Excel spreadsheet. The four items that were negatively phrased in the instrument were reverse-coded and captured on a separate Excel spreadsheet with reversed scores for data analysis.

Items 3 of the self-management subscale, 9 of the readiness-to-learn subscale, 5 and 15 of the self-control subscale were reverse-coded. The reverse coding was applied as follows: a score of 1 "strongly disagree" was reversed to a score of 5 "strongly agree, a score of 4 reversed to 2, while a score of 3 was not reversed; a score of 2 was reversed to 4 and a score of 1 was reversed to 5. The data with the reversed items was captured in sheet 2 of the Excel spreadsheet and reverse-coded items highlighted with a letter "R".

Numerical symbols were utilized for coding of the demographic data in Section A. The coding system was used to capture data consistently and improve on data analysis (Grove, *et a*l; 2013:517).

The questionnaire response categories in **sections B1, B2, B3 (**the Likert scale questions) had been allocated numerical codes of 1, 2, 3, 4 and 5. This facilitated ease of data capturing in the Excel spreadsheet.

Six (n=6), 60 percent of the pilot study participants chose the "uncertain" particularly in Question 3 of the self-management subscale. For this reason the participants in the pilot study were not included in the research study. The decision was discussed with the statistician.

3.10 RELIABILITY AND VALIDITY

Reliability in quantitative research refers to the instrument's ability to produce similar results consistently in a similar context when a retest is performed. Cronbach's alpha was calculated for each subscale on the IBM Statistical Package for Social Sciences (SPSS) version 24 to determine the internal consistency of the instrument

The internal consistency as determined on Anova: Two-Factor Without Replication for each subscale in the pilot study was determined with the following results:

Subscale on self-management: .75 subscale 1 **on desire to learn**: .69 and the subscale 3 **on Self-control**: 1.7. The overall scale internal consistency was 0.7, suggesting an acceptable level of internal consistency in a South African context.

Verification of the Cronbach's alpha on the IBM SPSS version 24 suggested, however, below the acceptable 0.60 score (Grove *et al*., 2013:392). This was possibly attributable to the small sample. The results were discussed with the statistician who supported the argument that a small sample was responsible for the low internal consistency results.
The study continued with the instrument as this was a credible instrument that had been validated.
The internal consistency in the main study was adequate with a Chronbach's alpha of .749 for the larger sample (n=63). The instrument was valid because respondents understood the content of the tool when the tool was discussed with them.

3.11ETHICAL CONSIDERATIONS

The ethical principles that are integral throughout the study were explained in Chapter 1

The participants' autonomy was upheld as they were assured that their participation in the study was voluntary. They were informed of their right to withdraw from the study at any time without any negative consequences towards them (Grove, *et al.*, 2013:178; RSA, 2015:15).

It was explained to the participants that, only the researcher, supervisor and the statistician

would have access to the information obtained. The contents of the questionnaire were explained by the researcher and discussed with participants to promote content understanding. The information sheet, consent form and the questionnaire were all in English, the medium of instruction in the college and as preferred by the participants. The questionnaires were returned without the names to protect the identity of the participants (RSA, 2015:17).

3.12 THE MAIN STUDY:

3.12.1 STUDY SETTING

The students were gathered in an auditorium for a college address on a career progression and finishing the programme. The researcher was scheduled to address the students before the commencement of the formal programme. The students had completed final examinations but were still placed in the clinical units before commencement of their annual vacation. The atmosphere was relaxed and less-than-usually formal. Students were seated at tables arranged in the auditorium in groups ranging from 5-8 per table. The date was 12 December 2016 and the time 08h00 in the morning.

3.12.2 POPULATION AND SAMPLING

Ninety-four (N=94) students were gathered in the auditorium near the college. The researcher had obtained permission from the principal and the student counselling head of department who was the organiser of the career development and finishing programme. The researcher presented information about the study, emphasising that the invitation to participate was voluntary. The researcher, assisted by the student counsellor and three student representative council members, distributed the information sheet and explained to 84 (n=84) individuals. This number excluded the ten students who had participated in the pilot study: they waited in the foyer as the 84 students were addressed. The students were given an opportunity to ask questions and clarify information. Students who volunteered signed a consent form and were presented with a questionnaire in an envelope containing a pen. Participants completed the questionnaires independently. The students present on the day of data collection formed the study sample and were conveniently sampled, as they were the available population at the time. Inviting all students to participate had the potential to increase the sample size and thus reduce sample size errors.

3.12.3 DATA COLLECTION

The students responded to a modified Likert scale. The structure of the questionnaire was a 40-item self-administered scale, with three subscales with a total score of 200. Data collection was conducted with all the students in an auditorium. The researcher did not interfere while students completed the questionnaire so as to avoid possible bias.

Sealable envelopes were provided in which to deposit the completed questionnaires. A portable box with a deposit window was provided which was collected after the time allowed for completing the questionnaire, as confirmed during the pilot study.

3.12.4 DATA ANALYSIS

Procedures for analysing data obtained when conducting a quantitative descriptive research design focus on defining the studied phenomena by utilizing the descriptive and inferential methods leading to formulation of conclusions, recommendations and generalisation of findings where relevant (Grove, *et al;* 2013:45).

Sixty-three (75 percent) out of 84 questionnaires were completed and returned. Three questionnaires were spoiled and not analysed. Eighteen questionnaires were returned blank. Data from the 63 completed questionnaires was entered into Microsoft Excel, then imported and analysed with a statistical analysing program, IBM SPSS (version 24) and Analysis of variance (ANOVA). The demographic data was coded for consistent capturing and analysis. The Biostatistics Unit at the Faculty of Medicine and Health Sciences at Stellenbosch University assisted the researcher with statistical analysis.

The level of self-directed learning readiness was depicted using numbers and frequencies and was compared against students' demographic characteristics. Descriptive statistics were used to comprehend the data and appropriate statistical tests such as Chi-square (categorical demographic variables) and t-tests (continuous variables) were utilized to test for relationships between variables. The services of the statistician were sought to ensure accuracy. The analysed data will be discussed in Chapter 4.

The data collection instruments were numbered. The age of the participants was captured as nominal data. The demographic data was coded for consistent capturing and data analysis. The original data from participants was capture in on Excel spreadsheet 1. The reversed scores data for negatively phrased statements was captured in spreadsheet 2 for statistical analysis.

3.12.5 RELIABILITY IN THE MAIN STUDY

In quantitative research, reliability is concerned with the ability of the instrument to measure consistently the concept being researched. Validity determines how well the instrument measures the attributes of the phenomenon being measured (Grove, *et al.,* 2013:289).

The internal consistency in the main study is illustrated in the table below.

Table 3.2: Chronbach's alpha scores for study subscales

Section B Questionnaire	Subscale	Number of items	Cronbach's Alpha value
Section B1	Self-management	13	.740
Section B2	Desire to learn	12	.690
Section B3	Self-control	15	.817
Overall		40	.749

The estimated Cronbach's alpha coefficient for the subscales was deemed adequate. Scales with an alpha score above 0.70 are deemed acceptable suggesting adequate level of internal consistency (Grove, *et al*., 2013:391).

3.13. ETHICAL CONSIDERATIONS OF THE MAIN STUDY:

3.1.3.1 Right to self-determination

The right to self-determination supports the ethical principle of respect for people. As such, participants' willingness to participate in this study was voluntary and they could withdraw from the study voluntarily (Grove *et al.,* 2013:178) In this study, when students chose not to return the questionnaires even though they had initially consented, their decision was respected and they were not coerced to participate. The heads of departments, rather than the researcher, contacted students to invite them to participate in the study, to minimise bias.

3.13.2 Right to confidentiality and anonymity

Confidentiality and anonymity support the participant's right to privacy of information (Grove *et al.,* 2013:172: RSA, 2015: 22). Maintaining non-disclosure of the names of all participants in the study ensured confidentiality. Providing a sealed envelope to the participant to return the data collection instrument nameless ensured anonymity.

3.13.3 Right to protection from discomfort and harm

The participants suffered no harm—physical or psychological—from participating in this study (Grove *et al.,* 2013:174; RSA, 2015:21). The data obtained was used exclusively for the study purpose. Contact details of the researcher, the supervisor and the Health Sciences Research Council were included in the consent form to enable participants to clarify any concerns they might have had and to ensure that the principles of doing good and causing no harm were upheld.

3.13.4 Right to informed consent

Adequate information about the study was provided to participants to enable them to decide on participation (Grove *et al.,* 2013:176; RSA, 2015:24). Participants were issued with an information sheet giving details about the study in simple English. The language of instruction in the colleges is English and the participants preferred the English version to the isiXhosa version. The researcher was available to clarify and answer questions. Participation in the study was voluntary.

3.14 SUMMARY

The pilot study small sample (n=10) presented reliability challenges related to the low Cronbach's alpha scores. The instrument that was previously tested with a Cronbach's alpha value of .830. The earlier study conducted in Australia had 201 (N=201) undergraduate nursing students as participants. In the main study with n= 63 participants the Cronbach's alpha score was .749, suggesting adequate reliability. Due to the 60 percent response on unsure option, in the self-management subscale item number 3, the pilot study results were not included in the study. The instrument was utilized without modifications.

3.15 CONCLUSION

The research methodology followed in the study provided an opportunity to gather data that is sample-specific with the purpose of generating sample-targeted results using an instrument that has been tested for validity and reliability to generate research findings.

Data analysis and the results will be presented in Chapter 4 using tables and graphs.

CHAPTER 4
RESULTS

4.1 INTRODUCTION

In Chapter 3 the research methodology utilized in conducting this study was described. Chapter 4 presents the data collected and depicts the analysis and interpretation of data in relation to the objective of the study.

The objective of the study was to measure the fourth-year nursing students' level of motivation for self-management, their desire for learning and their level of self-control, to determine their level of readiness for self-directed learning. Frequency tables and graphs were utilized to present the findings.

4.2 QUESTIONNAIRE RESPONSE RATE

The total population of fourth-year students in 2016 at the public nursing college where the study was conducted was N=94. The ten pilot study participants were not included in the research study, to prevent bias in their responses as they had completed the questionnaire just prior to the main study, resulting in an available population of N=84. Of the 84 questionnaires distributed, n=63 were completed, accounting for a 75 percent response rate. The results from the responses of the ten participants of the pilot study were utilized for modification of the instrument for the main research study. The returned questionnaires were analysed. The 95 percent confidence interval with the t-value selected at alpha (α) = 0.05 is referred to for the data analysis.

4.3 PRESENTATION OF THE STUDY FINDINGS

Measures of central tendency will be utilized when presenting data, which include means, frequencies, percentages, figures, tables and graphs to summarise and display the data analysed. The results will be presented in relation to the items in the research questionnaire, with explanation related to the significant research findings.

With the assistance of the statistician, data was analysed the using the IBM computer program, the Statistical Package for Social Sciences (SPSS) version 24, 2016. The level of statistical significance was set at Alpha (α) = 0.05. According to Grove, *et al.* (2013:686). Alpha refers to the level of statistical significance or the cut-off point for the determination of the difference between groups or samples being tested to indicate significance or non-significance, for the probability level at which the results of statistical analysis are judged.

The criteria for analysis and reporting pertain to the 95 percent confidence level.

The demographic data in **Section A** of the questionnaire is presented and discussed to determine the relationship of the demographic characteristics as determinants of the level of readiness for self-directed learning. The three subscales in **Section B** of the 40-item questionnaire are described, related to the characteristics of readiness for self-directed learning and to self-directed learning as a process.

4.4 RESULTS:

4.4.1 Section A: Demographic data

The biographical information in Section A of the questionnaire included the age in years, gender, dependants and the highest qualification of participants.

Chi-Square and t-test analysis were conducted to test for correlations between the demographical data and the level of readiness for self-directed learning. The findings suggested no statistical significance in the demographic data, as the alpha coefficient was greater than 0.05.

The sample included 63 participants (n=63) who were fourth-year students in a public nursing college. The demographic data of the sample is discussed below:

4.4.1.1 Question 1: Age in years

All the participants (N=63) responded to the question. The mean age of participants was 29.49, with the youngest participant being aged 21 and the eldest aged 55, as presented in Table 4.1 below.

Table 4.1. Frequency table indicating mean age of participants

Variable: Age	
N=63	
Mean	29.49
Std. deviation	8.382
Minimum	21
Maximum	55

Previous studies conducted suggested that maturity related to age and the presence of senior students in the academic courses were associated with a greater readiness for self-directed learning (Qamata-Mtshali, 2012:42).

In this study, even though 14.3 percent of the participants had lower levels of readiness for self-directed learning, there was no significant difference in mean age related to readiness for self-directed learning, thus the correlation of readiness for self-directed learning to age was statistically not significant, as illustrated in Table 4.2 below.

Table 4.2 Frequency table indicating the participants' readiness for self-directed learning in relation to age

Variable: Readiness for self-directed learning in relation to age	N	Mean	Std. Deviation	Std. Error Mean
Not ready (overall score <150)	9	29.22	3.962	1.321
Ready (overall score >=150)	54	29.54	8.933	1.216

4.4.1.2 Question 2: Gender distribution of the sample

In this study the participants were predominantly females, accounting for 87.3 percent, and males comprised 12.7 percent of the total participant number. It is acknowledged that the gender distribution implies that the nursing profession appears to be female-dominated (Wolfenden, 2011:2). Figure 4.1 below indicates the gender distribution of participants.

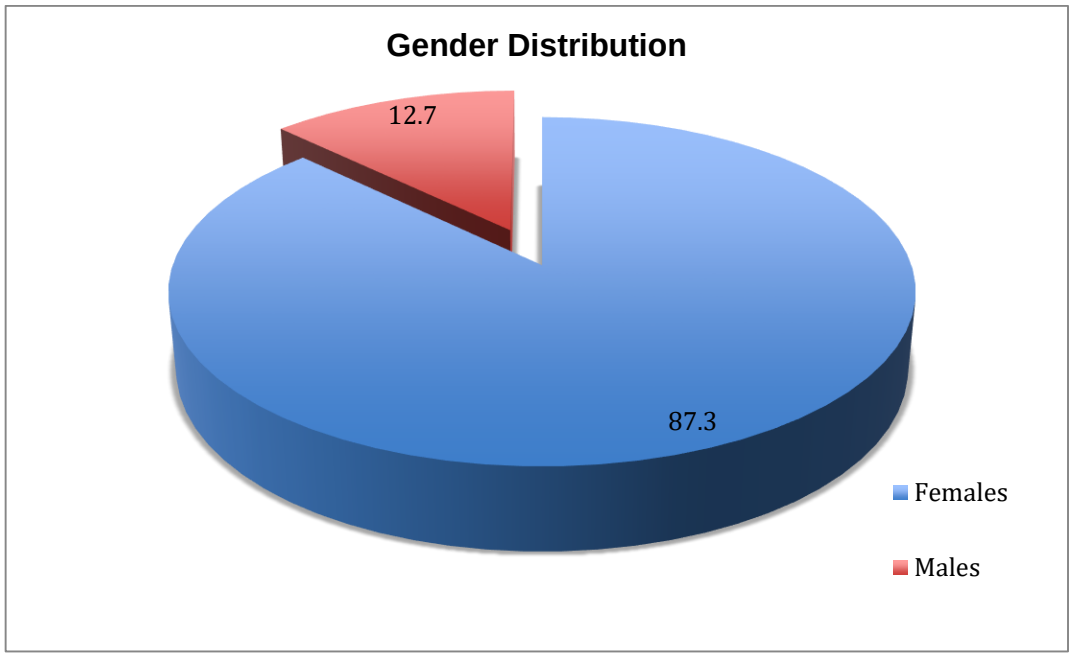

Figure 4.1 Pie graph indicating the gender distribution of participants

4.4.1.3 Self-directed learning readiness subscales mean scores related to gender

The mean scores for self-directed learning related to gender showed no statistical significance, as shown by the minimal difference in the standard deviation and standard mean error. A low standard deviation and standard error suggest that the sample mean is close to the population average (Grove, *et al.,* 2013:557) as shown in Table 4.3 below.

Table 4.3 Frequency table indicating the mean self-directed learning readiness scores and gender

Variable: Gender		N	Mean	Std. Deviation	Std. Error Mean
SM score	Male	8	55.1250	4.79397	1.69492
	Female	55	54.1455	6.35790	.85730
DL score	Male	8	52.7500	5.82482	2.05939
	Female	55	52.1636	5.09816	.68744
SC score	Male	8	64.8750	4.96955	1.75700
	Female	55	64.8182	7.18561	.96891
Overall score	Male	8	172.7500	13.79182	4.87614
	Female	55	171.1273	16.29139	2.19673

4.4.1.3.1 Overall readiness for self-directed learning scores related to gender

Table 4.4 below illustrates the percentage distribution of participants whose level of readiness was below 150 and the percentage distribution of those whose level of SDL was above 150 according to gender, however no significance was noted statistically.

Table 4.4 Overall readiness for self-directed learning scores related to gender

			Readiness		
			Not ready (overall score <150)	Ready (overall score >=150)	Total
Gender	Female	Count	8	47	55
		% Within Gender	14.5%	85.5%	100.0%
	Male	Count	1	7	8
		% Within Gender	12.5%	87.5%	100.0%
Total		Count	9	54	63

Eight (14.5 percent) females were not ready for SDL while one (12.5 percent) of the eight males was unready for SDL. The difference is however statistically insignificant.

4.4.1.4 Question 3: Dependants

The data was complete for the 63 participants regarding this question. The majority of participants (n=31) had one dependant, followed by 25 who had two dependants; three had three dependants, while four had no dependants. The percentage distribution of dependants amongst participants is 49.2 percent; 39.2 percent; 4.8 percent and 6.3 percent respectively. Figure 4.2 below illustrates the percentage distribution of the participants' dependants.

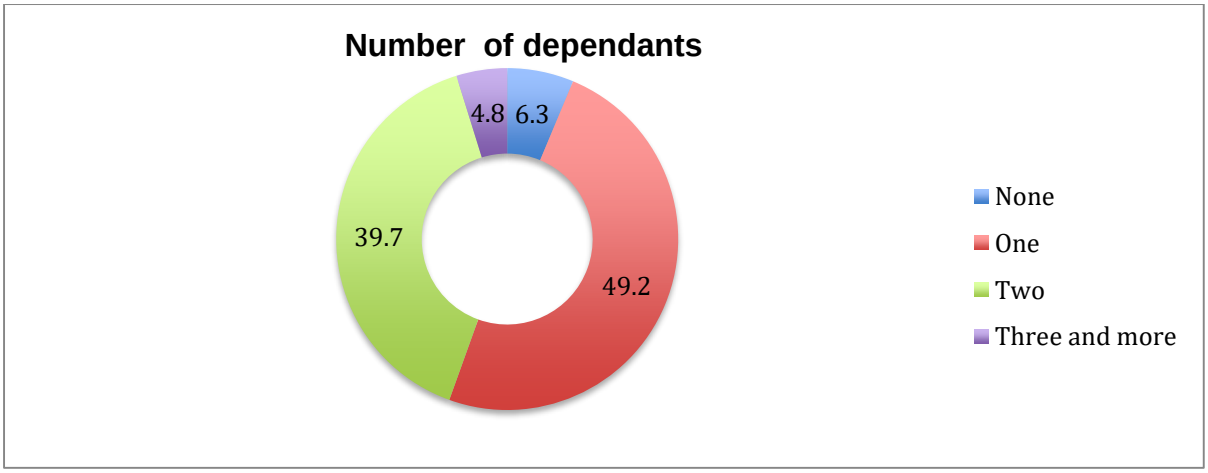

Figure 4.2 Doughnut chart reflecting percentage distribution of participants' number of dependants

There was no correlation between the number of participants' dependants and their readiness for self-directed learning as there was no statistical significance. Six (66.6 percent) of the nine participants with SDLR below 150 had two dependants while the 33.3 percent had one dependant, as shown in Table 4.5 below.

Table 4.5 Overall readiness for self-directed learning scores related to number of dependants

		Readiness for SDL		
Number of Dependants		Not ready (overall score <150)	Ready (overall score >=150)	Total
0	Count	0	4	
	% With Dependants	0.0%	100.0%	4
1	Count	3	28	100.0%
	% With Dependants	9.7%	90.3%	31
2	Count	6	19	100.0%
	% With Dependants	24.0%	76.0%	25
3	Count	0	3	100.0%
	% With Dependants	0.0%	100.0%	3
Total	Count	9	54	100.0%
	% With Dependants	14.3%	85.7%	63

It was noted in table 4.5 that participants without dependants were not represented in the sample population of participants with SDLR scores below 150. In a study conducted with a population sample of N=67 participants, to evaluate the self-directed learning readiness of first year students in a Bachelor programme in Australia, Smedley suggested that a larger sample was required to establish significance regarding participants' dependants (Smedley, 2007:382).

4.4.1.5 Question 4: Qualifications

Variable: Participants' Qualifications.

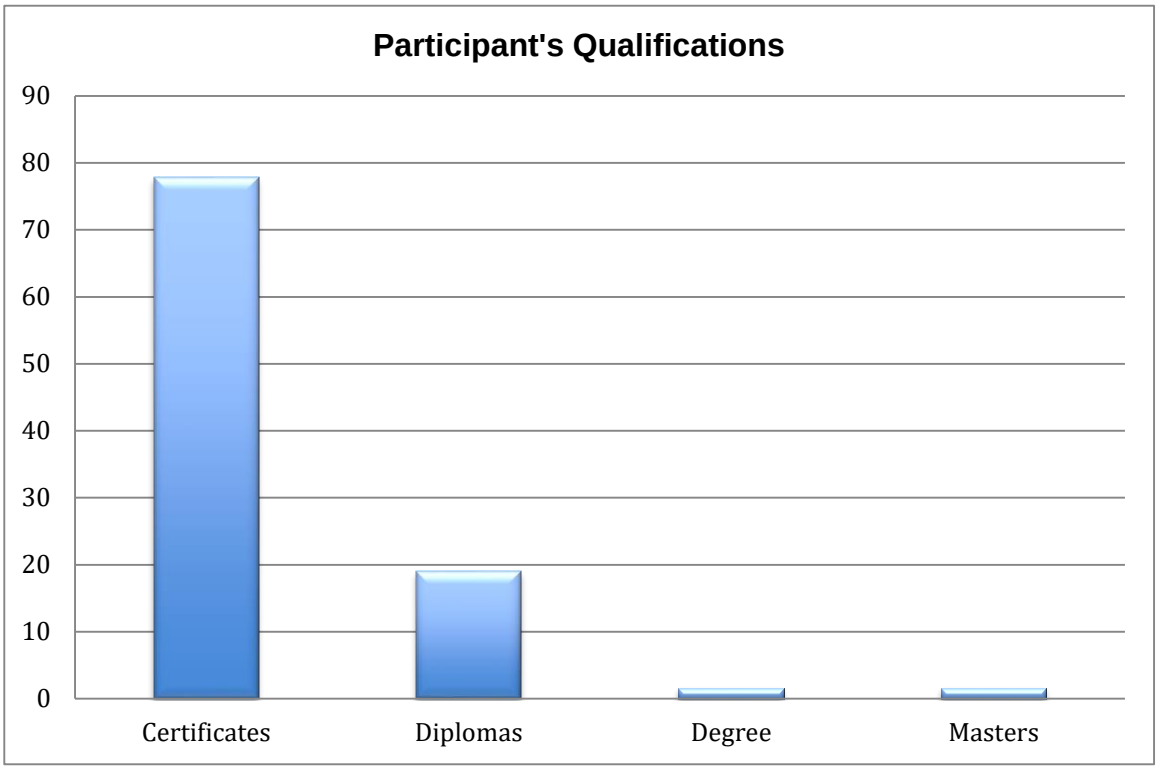

Figure 4.3 Frequency bar chart-indicating participant's qualification

Forty-nine (n=49) of the participants had gained certificates, as reflected by the 77.8 percent proportion, followed by the 19 percent possessing diplomas. Only 1.6 percent had graduate and postgraduate degrees as reflected in Figure 4.3 above.

The level of readiness for self-directed learning as related to qualifications is reflected in Table 4.6 below.

Table 4.6: Overall readiness for self-directed learning scores related to participants' qualifications

Qualifications		Readiness for SDL		
		(Overall score <150)	(Overall score >=150)	Total
Certificate	Count	4	45	49
	% within Qualifications	8.2%	91.8%	100.0%
Diploma	Count	5	7	12
	% within Qualifications	41.7%	58.3%	100.0%
Degree	Count	0	1	1
	% within Qualifications	0.0%	100.0%	100.0%
Postgraduate degree	Count	0	1	1
	% within Qualifications	0.0%	100.0%	100.0%
Total	Count	9	54	63
	% within Qualifications	14.3%	85.7%	100.0%

The trend in Table 4.6 shows that those with a diploma are less ready than those with certificates and degrees. Verifying the trend with the exclusion of degrees and master's qualifications, and comparing the participants with certificates and diplomas only, shows the trend to be statistically insignificant.

In a study conducted with a population sample of N=67 participants, to evaluate the self-directed learning readiness of first year students in a Bachelor programme in Australia, Smedley suggested that a larger sample was warranted to establish significance regarding participants' qualifications and their SDLR scores (Smedley, 2007:381; Qamata-Mtshali: 2012:45).

4.4.2 Section B: Findings emerging from the subscales of the questionnaire

The data collection instrument comprised three subscales, which evaluated the self-directed learning readiness in individuals. These subscales are aligned with the theoretic foundations related to self-directed learning as illustrated in the conceptual framework (Figure1.1), which serves a guide to this study to address self-directed learning as a process and as attributes of self-directed learners.

The data collection process, as described in Chapter 3, provided for data that could be organised logically for analysis. In this section, the research findings that reveal scores exceeding 50 percent variation from the expected phenomena will be discussed in a tabular form. In Chapter 3, Table 3.1 indicated the items in the three subscales related to SDLRS.

4.4.2.1 SUBSCALE 1: SELF-MANAGEMENT (B1: 1-13)

The participants responded to all questions, thus no reference is made regarding missing data. The valid percentage responses was based on a total of respondents of N=63 (100 percent), as all the participants responded to the 13 questions.

A total of 54.27 percent responded positively on agree to strongly agree on the subscale of self-management. The responses on the items of the self-management subscale are discussed below.

Likert scale applicable to questions B1 (1-13)

1. if you “strongly disagree” that the item measures a characteristic of yourself
2. If you “disagree” that the item measures a characteristic of yourself
3. If you are “unsure” that the item measures a characteristic of yourself.
4. If you “agree” that the item measures a characteristic of yourself
5. If you “strongly agree” that the item measures a characteristic of yourself

Question B1: 1: Solving problems using a plan

A total of 52.4 percent (n=33) respondents (see Table 4.7.1) appear to possess problem-solving skills whereby they utilize a plan, which according to Mulube *et al.* (2014:1878) is viewed as a positive attribute of self-directed learners.

Table 4.7.1: I solve problems using a plan

Participants’ responses	Frequency (f)	Percent (%)
1	3	4.8
2	6	9.5
4	33	52.4
5	21	33.3
Total	63	100.0

Question B1: 2: I prioritise my work

Self-management focuses on the ability of individuals to prioritise the activities and to set strict time frames to be engaging adequately in the process of self-directed learning, which is evident in the response rate of 52.4 percent (n=33) of the participants.

Table 4.7.2 I prioritise my work

Participants' responses	Frequency (f)	Percent (%)
1	2	3.2
2	3	4.8
4	25	39.7
5	33	52.4
Total	63	100.0

Question B1: 4: I have good management skills

Self-directed learners assume responsibility for collaborating with facilitators over the process of achievement of their set learning goals, through planning of activities, organising learning resources and utilisation of such to meet learning needs.

A total of 57.1 percent (n = 36) of the participants reported, as shown in Table 4.7.3 below.

Table: 4.7.3 I have good management skills

Participants' responses	Frequency (f)	Percent (%)
1	1	1.6
2	5	7.9
4	36	57.1
5	21	33.3
Total	63	100.0

Question B1: 6: I prefer to plan my own learning

The conceptual framework guiding this study illustrates the process of self-directedness as involving the self-directed learner taking the initiative to set learning goals within a guided and supportive learning environment. The 50.8 percent (N=32) response depicts the keenness of nursing students to plan their own learning as illustrated in Table 4.7.4 below.

Table 4.7.4 I prefer to plan my own learning

Participants' responses	Frequency (f)	Percent (%)
1	4	6.3
2	4	6.3
4	23	36.5
5	32	50.8
Total	63	100.0

Question B1: 8: I am able to focus on a problem

A total of 52.4 percent (n=33) participants asserted an ability to focus on problems. This finding is congruent with the 52.4 percent (n=33) who asserted, as depicted in Table 4.7.1, that they solved problems using a plan, suggesting a consistent approach to the management of problems.

Question B1: 9 I need to know why

The process of enquiry is highlighted in Knowles's assumptions that adult learners learn to explain issues in their real lives. Nursing students are required to explain the reasons for their interventions. With a 65 percent (n=42) participant response it would appear the fourth-year students in the said public nursing college have acquired this attribute, as shown in Table 4.7.5 below.

Table 4.7.5: I need to know why

Participants' responses	Frequency (f)	Percent (%)
2	1	1.6
4	21	33.3
5	41	65.1
Total	63	100.0

Question B1: 12 I learn from my mistakes

According to Grow (1990), self-directed learning is four-staged process through which students pass from being a teacher-dependent novice to an independent self-directed learner. During the growth process of developing SDL skills, mistakes are made and lessons learnt. Facilitation should be matched to the stage that the student is at to encourage growth and development towards independence that is achieve at stage four, when the student becomes a self-directed learner. The participants'' responses at 69.8 percent (n=44) suggest that they learn form mistakes. Table 4.7.6 illustrates the phenomenon.

Table 4.7.6: I learn from my mistakes

Participants' responses	Frequency (f)	Percent (%)
2	1	1.6
4	18	28.6
5	44	69.8
Total	63	100.0

Question B1: 13: I am open to new ideas

The South African Nursing Council (SANC) philosophy on nursing education requires nursing education institutions to promote a teaching and learning environment that promotes enquiry. Through enquiry new ideas are explored and discovered. Lifelong learning requires self-directed learners to open their minds to new ideas, particularly on evidence-based practice. The 58.7 percent participant response represents a cohort that whose members are open to new ideas, as shown in Table 4.7.7 below:

Table 4.7.7: I am open to new ideas

Participants' responses	Frequency	Percent (%)
1	2	3.2
4	24	38.1
5	37	58.7
Total	63	100.0

4.4.2.2 SUBSCALE 2: DESIRE TO LEARN (B2: 1-12)

The valid percentage responses were based on a total of respondents of N=63 (100 percent), as all participants responded to the 12 questions. A total of 52.24 percent responded positively on agree to strongly agree on the subscale of desire to learn. The responses on the items of the desire-to-learn subscale are discussed below.

Likert scale applicable to questions B2 (1-12)

1. If you “strongly disagree” that the item measures a characteristic of yourself
2. If you “disagree” that the item measures a characteristic of yourself
3. If you are “unsure” that the item measures a characteristic of yourself.
4. If you “agree” that the item measures a characteristic of yourself
5. If you “strongly agree” that the item measures a characteristic of yourself

Question B2: 2: I am responsible

Self-directed learning involves the individual’s motivation in taking responsibility for their learning activities, with or without the help of others, to address learning needs (Knowles, 1975:18). The participants presented a 68.3 percent response, suggesting that the students possess the attribute for taking responsibility for their learning, as shown in Table 4.7.8.

Table 4.7.8: I am responsible

Participants’ responses	Frequency (f)	Percent (%)
4	20	31.7
5	43	68.3
Total	63	100.0

Question B2: 3: I like to evaluate what I do

The five-step model of self-directed learning illustrates goal setting towards self-directed learning, culminating to the evaluation of activities designed to achieve the set goals. A total of 55.6 percent (n=35) of the study participants presented an interest in evaluating what the activities they undertake to accomplish the plans set to achieve the desired learning goals, as illustrated in Table 4.7.9.

Table 4.7.9: I like to evaluate what I do

Participants’ responses	Frequency	Percent (%)
2	3	4.8
4	25	39.7
5	35	55.6
	63	100.0

Question B2: 4: I have high personal expectations

The findings of 65 percent (n=41), as shown in Table 4.7.10, suggested that the participants are enthusiastic and have set high personal expectations for themselves, which would encourage them to be enthusiastic in real life, as high personal expectation inculcate the culture of being a self-starter, taking the initiative and displaying a positive attitude towards motivation skills.

Table 4.7.10: I have high personal expectations

Participants' responses	Frequency (f)	Percent (%)
2	1	1.6
4	21	33.3
5	41	65.1
Total	63	100.0

Question B2: 5: I have high personal standards

The abilities required of self-directed learners relate to the enquiry and information-seeking skills. It is reassuring that 65.1 percent (n=41) of the fourth year students have high personal skills, which would be inherent skills required for lifelong learning.

High personal standards related to desire to learn include the ability to intrinsically motivate one to seek resources, utilising basic study skills to address the identified learning needs.

Table 4.7.11: I have high personal standards

Participants' responses	Frequency (f)	Percent (%)
1	1	1.6
2	1	1.6
4	24	38.1
5	37	58.7
Total	63	100.0

Table 4.7.12 shows that 50.8 percent of the participants expressed confidence in their abilities as motivated learners for self-direction. The percentage is just higher than the average number of participants. It is not a great majority of students who feel confident about their abilities for self-direction as related to the desire to learn.

Table 4.7.12: I have high beliefs in my abilities

Participants' responses	Frequency (f)	Percent (%)
2	1	1.6
4	32	50.8
5	30	47.6
Total	63	100.0

Question B2: 8: I am confident in my ability to search out information

Table 4.7.13 shows that 50.8 percent of the participants expressed confidence in their ability to seek for information, implying that they were able to utilize a variety of sources, differentiating between primary and secondary sources of information, collaborating with facilitators, peers, using libraries and abstracts as self-directed learners are expected to.

Table 4.7.13: I am confident in my ability to search out information

Participants' responses	Frequency (f)	Percent (%)
2	1	1.6
4	32	50.8
5	30	47.6
Total	63	100.0

Question B2: 10: I have a need to learn

Self-directed learners display curiosity at high levels, showing interest in their learning. They possess a strong awareness of the process of learning and the related demands of the learning tasks. They are constantly conscious of their preferences for learning and exercise flexibility as they realise the need to learn to address real life learning needs. Participants in the study showed a strong desire to learn at 65.1 percent (n=41), as expressed in Table 4.7.14 below.

Table 4.7.14: I have a need to learn

Participants' responses	Frequency (f)	Percent (%)
1	1	1.6
2	2	3.2
4	19	30.2
5	41	65.1
Total	63	100.0

Question B2: 12: I want to learn new information

Students whose readiness for self-directed learning is inadequate tend to prefer a teacher-directed approach. When learners are self-directed learners, they are self-motivated and autonomous in regard to enriching their learning by acquiring new information. A total of 68 percent of the study participants expressed that they wanted to learn new information, as shown in Table 4.7.15 below.

Table 4.7.15: I want to learn new information

Participants' responses	Frequency (f)	Percent (%)
1	1	1.6
4	19	30.2
5	43	68.3
Total	63	100.0

4.4.2.3 SUBSCALE 3: SELF-CONTROL (B3: 1-15)

The valid percentage responses were based on a total of respondents of N=63 (100 percent), as all participants responded to the 15 questions. A total of 64.86 percent responded positively on agree to strongly agree on the subscale of self-management. The responses on the items of the self-management subscale are discussed below.

Likert scale applicable to questions B3 (1-15)

1. If you “strongly disagree” that the item measures a characteristic of yourself
2. If you “disagree” that the item measures a characteristic of yourself
3. If you are “unsure” that the item measures a characteristic of yourself.
4. If you “agree” that the item measures a characteristic of yourself
5. If you “strongly agree” that the item measures a characteristic of yourself

Question B3: 3: I am self-disciplined

As a self-directed learner, the individual demonstrates creativity, individuality and assuming accountability for activities directed towards learning in a self-controlled environment, regulated by the individual. Nursing practitioners are required to be disciplined in providing nursing care in the various health care settings. Nursing education institutions have a responsibility to promote the culture of self-directed nurses during training so as to inculcate a generic attribute of lifelong learning with self-discipline as a related characteristic. A total of 50.8 percent (n= 32) of the participants responded that they were self-disciplined, as illustrated in Table 4.7.16 below.

Table 4.7.16: I am self-disciplined

Participants’ responses	Frequency (f)	Percent (%)
1	2	3.2
2	8	12.7
4	32	50.8
5	21	33.3
Total	63	100.0

Question B3: 5R: I am organised

A total of 55.6 percent (n=35) as depicted in Table 4.7.17 expressed the belief that they were organised and in question B3: 7, 60.3 percent (see Table 4.7.18) indicated that they were methodical. Participants' responses show a reasonable consistency in the capacity to organise their activities in self-directed learning. As future nursing practitioners the ability to be organised and methodical is a required attribute, as life-long learning would need to prioritise identification of learning needs, setting goals, identifying resources to meet learning needs, implement the identified activities and evaluate the achievement of set goals in an organised manner.

Table 4.7.17: I am organised

Participants' responses	Frequency (f)	Percent (%)
2	9	14.3
4	19	30.2
5	35	55.6
Total	63	100.0

Question B3: 7: I am methodical

Self-direction as a personal attribute addressed the ability to implement a system of identifying learning needs, formulate goals for learning to bridge the knowledge gap, and seek resources for implementation to fulfil the learning need. The system is organised methodically. A total of 60 percent of the participants expressed the belief that they possess the attribute of being methodical in their learning, as shown in Table 4.7.18.

Table 4.7.18: I am methodical

Participants' responses	Frequency (f)	Percent (%)
2	9	14.3
4	38	60.3
5	16	25.4
Total	63	100.0

Question B3: 8: I evaluate my own performance

Following implementation of a plan to achieve set goals, the self-directed learner evaluates the learning process and the related activities for effectiveness in addressing identified learning needs. Even though it is not such a high percentage, 50.1 percent of the participants suggested that they evaluated their learning, a characteristic of self-directed learning as shown in Table 4.7.19 below.

Table 4.7.19: I evaluate my own performance

Participants' responses	Frequency (f)	Percent (%)
2	4	6.3
4	27	42.9
5	32	50.8
Total	63	100.0

Question B3: 9: I prefer to set my own criteria

In order to evaluate the achievement of set goals, criteria are set against which goal achievement is measured. Self-directed learners set their own criteria that are specific, measureable, attainable and realistic, within specified time frames, in consultation with the facilitators, because self-directed learning is collaborative. A total of 61.9 percent of the participants agreed that they preferred setting their own criteria, as shown in Table 4.7.20.

Table 4.7.20: I prefer to set my own criteria

Participants' responses	Frequency (f)	Percent (%)
1	1	1.6
2	6	9.5
4	39	61.9
5	17	27.0
Total	63	100.0

Question B3: 10: I am responsible for my own decision

Self-directed learners take responsibility for problems solving by collecting the relevant information to influence a favourable decision. Once decisions have been made, accountability for the decision made rests with the individual. Nursing practitioners are held accountable for acts and omissions when providing health care service.

Nursing students need to acquire the attributes, which they would utilize in nursing care decision-making. In this question, 68.3 percent (n=43) of the participants expressed their belief that they possessed this attribute, as shown in table 4.7.21 below.

Table 4.7.21: I am responsible for my own decisions

Participants' responses	Frequency (f)	Percent (%)
4	20	31.7
5	43	68.3
Total	63	100.0

Question B3: 11: I can be trusted to pursue my own learning

Rapid changes in information about health care and in life generally, warrant individual nurse practitioners engaging in lifelong learning to address the burden of disease and to survive. It is necessary therefore for nursing education institutions to encourage the culture of self-directedness as a crucial graduate attribute, for graduates to maintain competence that will sustain them as relevant practitioners. Some students are not keen on self-directed learning approaches, thus it is noted in this study that 61.9 percent (n=39) of the participants expressed the belief that pursue their own learning.

Table 4.7.22: I can be trusted to pursue my own learning

Participants' responses	Frequency (f)	Percent (%)
2	3	4.8
4	21	33.3
5	39	61.9
Total	63	100.0

Question B3: 12: I can find out information for myself.

The capacity to search for the relevant information to address learning needs has been addressed in question B2: 8. Participant's responses in both questions are just above average at 50.8 percent and 52.4 percent respectively, as shown in tables 4.7.13 and 4.7.23 below respectively.

Table 4.7.23: I can find out information for myself.

Participants' responses	Frequency (f)	Percent (%)
1	1	1.6
2	1	1.6
4	28	44.4
5	33	52.4
Total	63	100.0

Question B3: 13: I like to make decisions for myself

In Question B3: 10, the responsibility to take decisions was discussed, with a response rate of 68.3 percent: however in this question the response rate was 68.7 percent, showing an almost 10 percent variance in the responses, possibly suggesting that taking responsibility for decision is viewed as mandatory, as per the nursing legislation about which nursing students are aware. A total of 58.7 percent (n=37) like to make decisions by themselves, showing a preference towards self-directedness, as shown in Table 4.7.23 which shows a percentage decline compared to 68.3 percent in Question B3: 10.

Table 4.7.24: I like to make decisions for myself

Participants' responses	Frequency (f)	Percent (%)
4	26	41.3
5	37	58.7
Total	63	100.0

Question B3: 14: I prefer to set my own goals

The capacity to plan and design strategies and activities to meet learning needs is a desired attribute for self-directed lifelong learners. Personal goals for learning and target setting improve the individual's learning capacity and, eventually, goal attainment. Taking responsibility for setting personal learning goals improves confidence to resolve problems and tackle challenges, due to the intrinsic motivation that comes with taking ownership of the learning and development process. Motivation to achieve the goals promotes self-esteem. Collaboration with peers and the facilitator assists in focussing goal setting because self-directed learners do not necessarily have to be isolated. A total of 63.5 percent (n=40) of the participants expressed the view that they preferred to set their own goals, as illustrated in Table 4.7.25.

Table 4.7.25: I prefer to set my own goals

Participants' responses	Frequency (f)	Percent (%)
4	23	36.5
5	40	63.5
Total	63	100.0

Question B3: 15: I am in control of my life

Self-directed learners take control of their learning situations and their lives generally. They engage in the process of setting individual targets and plans that motivate them to become active participants in the process of learning during training and in the workplace.

As they gain independence in learning and acquire enquiry skills, they identify significant aspects they need to achieve to realise their full potential as relevant practitioners. Realisation of the plans promotes ownership and control over the process of learning and a conscious thinking about learning how to learn, which fulfils the aim of nursing education.

A total of 69.8 percent (n=44) of the participants suggested they are in control of their lives, as shown in Table 4.7.26.

Table 4.7.26: I am in control of my life

Participants' responses	Frequency (f)	Percent (%)
1	6	9.5
2	5	7.9
4	8	12.7
5	44	69.8
Total	63	100.0

4.4.2.4 Overall subscales statistical summaries

4.4.2.4.1 Mean scores for the subscales

The study objective sought to determine the readiness for self-directed learning readiness of the fourth-year nursing students by measuring their capacity for self-management, readiness to learn and self-control. The summary statistics of the results of mean scores of the three subscales are presented in Table 4.8.1 below. No missing data was reported as all participants responded to all the items in each subscale.

Table 4.8.1 Summary statistics of subscale mean scores

Statistics			
	Self-Management	Desire To Learn	Self-Control
Valid responses	63	63	63
Missing	0	0	0
Mean	54.2698	52.2381	64.8254
Median	55.0000	53.0000	65.0000
Std. Deviation	6.15710	5.14849	6.91081

The highest mean score was for self-control (64.8 percent), self-management followed at 54.2 percent and the lowest was for the desire to learn (52.2 percent). This is evident in the analysis of participants' responses, illustrating that in 33 percent of the items for desire to learn, the responses were below 50 percent, compared to 20 percent and 25 percent for self-management and self-control respectively.

4.4.2.4.2 Overall self-directed learning readiness score

Readiness for self-directed learning is suggested as being adequate when the overall score is equal to or greater than 150 (Fisher, *et al.,* 2001). In this study the overall self-directed learning readiness mean score of participants was 171.33, suggesting an adequate self-directed learning readiness as shown in Figure 4.4 below.

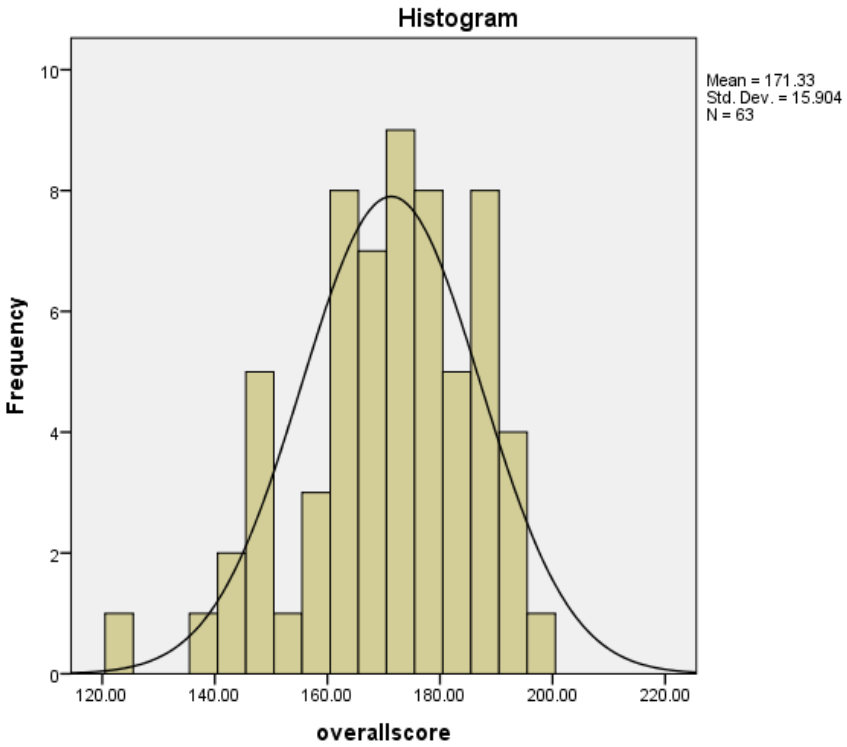

Figure 4.4 Histogram of participants' overall self-directed learning scores

A total of 85.7 percent (n=54) of the 63 participants achieved a score of 150 or above, accounting for 14.3 percent (n=9) who achieved self-directed learning scores of less than 150. Readiness for self-directed learning is viewed as a generic attribute required for lifelong learning. Due to constant change in the information and skills necessary for the health care services, nurses need to keep abreast with lifelong principles to engage successfully in CPD. The SDLR scores that were below 150 could suggest that some students prefer a teacher-structured learning and would require support towards becoming self-directed.

4.4.2.4.3 Validity and reliability of the SDLRS

In this study, internal consistency was found to be adequate as it was above the acceptable 0.70 on Cronbach's Alpha. The Cronbach's Alpha score of the 40-item self-directed learning readiness scale was .749. The scores of the three subscales reflected that self-management was .740, desire for learning .690, and self-control .817 respectively.

The findings were compared to the findings of the study conducted in Australia by Fisher, *et al.,* (2001) in Table 4.8.2 below.

Table 4.8.2: Reliability statistics for the three subscales compared to Fisher's

Reliability Statistics				
	Self-management	Desire to learn	Self-control	Overall SDL
	Cronbach's Alpha	Cronbach's Alpha	Cronbach's Alpha	Cronbach's Alpha
This Study	.740	.690	.817	.749
Fisher (2001)	.857	.847	.830	.924

Even though the three constructs' Cronbach's alpha values were considered acceptable for internal consistency, they were lower compared to findings in the Fisher study, as seen in Table 4.8.2.

This phenomenon was also identified in a study conducted in Johannesburg with students at two universities (Qamata-Mtshali, 2013). This could be attributable to the sample size, which was smaller in this study compared to Fisher's. Fisher's study was conducted in Australia with 201 undergraduate nursing students, whom were English speaking. Even though the language of instruction in the public nursing college is English, this is not the first language for these participants. The instrument was not translated due to the wide diversity of language in the Gauteng Province and the fact that the language of instruction in the public nursing college is English. The students preferred to respond in English as their language of instruction, thus a translator was not provided. The overall Cronbach's alpha score for the SDLR scale was above 0.70.

4.4.2.4.4 Validity

In this study the construct validity was tested through analysis of the individual item mean score to establish the relevance of the constructs to the phenomenon being tested, readiness for self-directed learning in this case. The mean scores of the individual items in each subscale were statistically analysed for correlation to self-directed learning readiness. This analysis enabled the establishment of the relationship of each item to the total by statistically determining the scale mean if each item is deleted and the Chronbach's alpha for each item for correlation to the concept of self-directed learning readiness.

The cut-off point utilized by Fisher, *et al.,* (2001:522) for the individual items correlation is greater than 0.3, indicating the correlation of an item to the overall scale as presented in Table 4.8.2

The following items were however found to be below the generally accepted 0.3 cut-off point according to Fisher, *et al.,* (2001:522):

- Item numbers 1 and 13 with scores of .210 and .107 on the self-management subscale.
- Item numbers 1 and 9 with scores of .003 and .241 on the readiness-to-learn subscale and item number 9 with a score on .239 on the self-control scale

The researcher acknowledges the concern that could be raised regarding item scores that are below the 0.3 item loading cut-off point, however it is also noted that the internal consistency of each of the items in the scale was above the acceptable .70 suggesting adequate correlation and internal consistency of each item to the total (Fisher *et al.,* 2001; 522). The purpose of this research was not to validate the scale, which was validated by the instrument developer, thus the analysis was accepted. This phenomenon is noted in a study conducted by Qamata-Mtshali (2012) in two South African universities with undergraduate nursing students.

4.7 CONCLUSION

This chapter reported on the results obtained through the administration of a questionnaire completed by fourth-year nursing students in the four-year diploma programme in nursing at a public nursing college in Gauteng. Statistical analysis of the data was facilitated through the statistician and statistical tests. The response rate was 75 percent suggesting adequate response for the sample. The results of the analysed demographic data were presented regarding the sample age, gender, qualifications and dependants. The demographic data analysed yielded results that were statistically insignificant in relation to the level of readiness for self-directed learning. The data analysed was adequate to determine the level of readiness for self-directed learning of the sample. The self-directed learning domains assessed by measuring students' motivation for self-management, the desire to learn and the capacity for self-control, which are required traits for life-long learning were presented, using frequency tables and graphs. The reliability test results of the subscales were presented and compared to previous studies. The results of this study indicated that 87.3 percent of the fourth-year nursing students displayed readiness for self-directed learning, with 14.7% not ready for self-directed learning.

Chapter five will present a discussion of the results, together with the interpretation, application and recommendations pertaining to the study aim and objective.

CHAPTER 5
DISCUSSION, CONCLUSIONS AND RECOMMENDATIONS

5.1.1 INTRODUCTION

Chapter 4 presented a report of the findings and results analysis as generated statistically in line with the research paradigm, towards achievement of the research objective. In Chapter 5 the findings of the research process will be discussed in the context of the objective that had been set to address the research question and aim.

5.1.2 Study objective

The objective of the study was to determine the level of readiness for self-directed learning (SDL) at a public nursing college by measuring the fourth-year students' motivation for self-management, their desire for learning and their levels of self-control.

5.1.3 Discussion

The discussion in Chapter 5 will be conducted in reference to the study objective as stated in 5.1.1. The study findings as discussed in the results, presented in Chapter 4, will be referred to, to address the study objective and to answer the research question.

5.1.3.1 Demographic data

In this study the demographic data did not affect the level of readiness for self-directed learning of the participants. Innate personality traits and characteristics have not significantly affected levels of readiness for self-directed learning as related to demographic date. This differs from the results of the study by Williams; *et al.* (2013:107) that suggested an increase in SDL related to age was evident.

5.1.3.1.1 Age in years

In a study conducted by El-Gilany *et al.* (2012:1042) with Saudi Arabian nursing students, the mean total score for female students was lower than for the male students. However the demographics did not affect their self-directed learning readiness scores. In the study of El-Gilany *et al.* (2012:1042) it was reported that a majority (77 percent) of students possessed high levels of readiness for SDL which was not influenced by students demographics and learning style.

In this study the mean age of participants was 29.49 years, with the youngest participant being aged 21 and the eldest aged 55, as was presented in Table 4.1, in Chapter 4.

In a study conducted by Qamata-Mtshali (2012), it is suggested that maturity related to age and senior students in the academic courses were associated with a greater readiness for SDL (Williams; *et al.* (2013:107).

In this study, there was no significant difference in mean age related to readiness for SDL, thus the correlation of readiness for SDL to age was statistically not significant, as illustrated in Table 4.2 in Chapter 4.

5.1.2.1 Gender There was no statistical significance related to gender, as shown by minimal difference in the standard deviation and standard mean error.

Table 4.4 illustrated the percentage distribution of participants whose level of readiness was below 150 and the percentage distribution of those whose level of SDL was above 150 according to gender, however there was no significance noted statistically. Eight, (14.5 percent) females were not ready for SDL while one (12.5 percent) of the eight males was not ready for SDL.

5.1.2.2 Dependants

The majority of participants (n=31) had one dependant, followed by 25 who had two dependants; three had three dependants, while four had no dependants. The percentage distribution of dependants amongst participants is 49.2 percent; 39.2 percent; 4.8 percent and 6.3 percent respectively. Figure 4.2 illustrated that there was no correlation between the number of participants' dependants and their readiness for self-directed learning as there was no statistical significance.

In a study conducted by Smedley, with a population sample of N=67 participants, to evaluate the self-directed learning readiness of first year students in a Bachelor programme in Australia, Smedley suggested that a larger sample was required to establish significance regarding participants' dependants (Smedley: 2007:381; Prabjandee *et al.,* 2013:6).

5.1.2.3 Participants' Qualifications.

Figure 4.3 Frequency bar chart-indicating participant's qualification

Forty-nine (n=49) of the participants had obtained certificates, as reflected by the 77.8 percent, followed by the 19 percent possessing diplomas. Only 1.6 percent had graduate and postgraduate degrees as reflected in Figure 4.3 above.

The level of readiness for self-directed learning as related to qualifications reflected a trend that those with a diploma are less ready than those with certificates and degrees. Verifying the trend with the exclusion of degrees and master's qualifications, and comparing the participants with certificates and diplomas only, shows the trend to be statistically insignificant.

In a study conducted with a population sample of N=67 participants, to evaluate the SDL readiness of first-year students in a Bachelor programme in Australia, Smedley suggested that a larger sample was warranted to establish significance regarding participants' qualifications and the SDLR scores (Smedley: 2007: 381; Prabjandee *et al.,* 2013:7).

5.2.1 SECTION B

5.2.1.1 Self-management

The Subscale of Self-Management addresses the ability of the student in the implementation of their set goals for learning, and the effective management of the appropriate resources for learning that are within the availability of the student (Klunklin, *et al.,* 2010:177) The self-management subscale focuses of on such factors as effective time management, the methodical and systematic application learning approaches setting time for learning. Priorities are established with effective problem solving techniques utilising appropriately sought information (Huynh *et al.*, 2009: 73).

The sum total of the subscale is 65 from the 13 (n=13) items multiplied by 5 which is the maximum score for strongly agree chosen options. The mean score in the study for self-management was 54.27.
Collaboration between the facilitator and the student is necessary because SDL is not an isolated process, however the student is required to be a motivated active participant. Even though the majority of participants (69 percent and 65 percent) responded that they exercised enquiry to learning and learn from their mistakes, 27 percent, 33.3 percent and 17.5 percent responded that they managed their time well, had good management skills and set strict time frames for studying respectively.

The mean score of the participants for self-management was 54.27, the second highest of the three constructs after self-control which was the highest at 64.8 percent

Self-management incorporates the skill to practice metacognition, with students' engagement with learning at deeper levels of enquiry regarding the fulfilment of learning needs (Qamata-Mtshali, 2012:26).

In this study, even though 14.3 percent of the participants have self-directed learning readiness levels below 150, the mean scores suggest an acceptable level of self-management. According to Fisher et al. (2001 self-directed learning score above 150 suggest an adequate level of readiness for self-directed learning.

5.2.2 Desire for learning

The desire to learn relates to the students motivation levels and the ability of the students to realistically seek new information to address their learning needs in a positive and enjoyable manner. The students who display a satisfactory desire to learn are confident and aware of their challenges and capabilities in their study skills (Fisher *et al*., 2001: 522)

It includes items such as, seeking assistance to resolve problems, enjoying studies, with high expectations and confidence in abilities to search for information and wanting to learn more, new information. A total 68.3 percent of the participants responded that they want to learn new information while 44.4 percent responded that they enjoyed studying. In this study the participants' mean score for desire to learn was 52.24 percent, suggesting an average desire for learning capacity by the participants.

5.2.3 Self-control

The Subscale Self-Control determines the ability of the students for self-monitoring and evaluation the achievement of set learning goals and outcomes ability to self-evaluate and as a result determine their own learning goals and outcomes (Williams *et al.,* 2013.104).
The subscale includes items as "I have high expectations of myself' 'I am aware of my abilities to set my own goals'. The subscale total is 75 with the 15 items and a maximum score of each item at 5 for strongly agree response.

In this study the level of self-control in this study was higher than self-management and desire to learn. This was consistent with a study conducted in Turkey on the effects of self-directed learning readiness, involving n=162 second-level nursing students, showed that a web-based course positively affected the readiness of students regarding self-directed learning, using Fisher's self-directed learning readiness scale (SDLRS) as their ability to take responsibility for their learning improved (Şenyuva & Kaya, 2014: 388).

5.2.4 Readiness for self-directed learning

Readiness for SDL is unique to individuals in a continuum explaining the variations in the levels of SDL. Individual students with different levels of motivation, critical thinking and problem solving skill will exhibit varying levels of readiness for self-directed learning depending on the stage of Self-directed Learning they have reached (*Kan'an et al.,*2015: 791).

Those students, who have low readiness for SDL and are exposed to a SDL project, exhibit high levels of anxiety, and similarly those learners with a high readiness for SDL who are exposed to increasing levels of teacher direction also exhibit high anxiety levels (Huang, 2008: 7: Grow, 1991:132). These findings suggest that it is important for nurse educators to assess the students' level of readiness for self-directed learning to match and balance as far as possible the facilitation strategies and needs of the students.

According to the study by Fisher, *et al.*, (2001:519) conducted with Australian undergraduate nursing students, a score of 150 suggested adequate readiness for self-directed learning (Fisher, *et al.,* 2001:520). A study conducted on Saudi Arabian nursing students gave rise to findings with a mean total score of 159.6. The mean score on self-management was 51.3, desire for learning 48.4 and self-control 59.9 (El-Gilany *et al.,* 2012:1042). The scores are relatively lower compared to this study, where the overall score of the cohort was 171.33, suggesting that self-directed level readiness varies in different populations, making it advisable for nurse educators to establish the level of readiness for self-directed learning to support students appropriately.

A study conducted on self-directed learning readiness indicated that SDLR was at a high level among 77 percent of nursing students in Saudi Arabia (El-Gilany *et al.,* 2012:1042). However in Pakistan only 23 percent of nursing students scored above average on the SDL readiness scale, with 18 percent being found to be below average and more than 50 percent merely average scorers (Gul, *et al.,* 2009). The results were consistent with the finding in this study where 14.7 percent of the participants had scores below 150.

5.3 LIMITATIONS OF THE STUDY

According to Grove, *et al.* (2013:598), limitations of the study refer to the restrictions or challenges in a study that could potentially reduce the generalizability of findings. In this study the following were identified as limitations:

5.3.1 Research setting

The study was conducted in one college as recommended through the ethics committee. The research findings are thus sample-specific and cannot be generalized to other nursing colleges.

5.3.2 Sample size

The study was conducted in one college, thus the sample size was smaller compared to the total population of students who were in their fourth year of study at Gauteng public nursing colleges in 2016.

5.4 CONCLUSION

According to Grove, *et al.* (2013:597), the convenience sampling method is viewed as being a weak sampling method, however, in the context of this study it was suitable for including a greater number of students, which proved adequate as a 75 percent sample of the population participated

The finding of this study indicated that the fourth-year students in the four-year diploma course of the nursing programme displayed satisfactory levels of readiness for self-directed learning, as suggested by the 85.9 percent of students who achieved scores above 150. However some 14.3 percent of students showed inadequate readiness for SDL. The implication is that nurse educators may need to assess the readiness for SDL of their students to incorporate strategies that promote an inquiry-based teaching and learning environment to promote SDL and lifelong learning. Self-directed learning does not however mean that students need to learn in isolation. The learning process involves consultation with the lecturers who assume the role of facilitators.

5.5 RECOMMENDATIONS

5.5.1 Recommendation 1: Measuring the level of readiness for self-directed learning

Readiness for self-directed learning varies from person to person along a continuum, as students may display various levels and stages of readiness (Qamata-Mtshali, 2012:35; Premkumar, Pahwa, Banerjee, Baptiste, Bhatt, & Lim, 2014:935). Measuring the level of readiness for self-directed learning of students is recommended in nursing education institutions to determine the stage of readiness of the students. Readiness levels should be considered in determining the degree of self-direction required, balanced with facilitator guidance (Mulube & Jooste, 2014:1781). Readiness, as explained by Grow (1991:130), is an integration of motivation and capability, thus nurse educators should encourage an enquiry-based approach to inspire self-direction in students.

5.4.2 Recommendation 2: Promoting self-directed learning

Planning of a student-centred approach to facilitation of lifelong learning may be improved when the enquiry methods are balanced with a lecture-based approach to minimise anxiety in students who are not yet ready for self-directed learning, while at the same time not focusing exclusively on the traditional, lecture-based method (Smedley, 2007:384). The aim should be to build a teaching and learning climate that supports SDL, while promoting reflection and awareness for both students and facilitator regarding the required skills and abilities for SDL. Providing authentic activities that have real-life meaning and relevance for students will assist in enhancing motivation and appreciation for the subject content to resolve work-based challenges (Kan'an, *et al.,* 2015).

5.4.3 Recommendation 3: Capacitation of facilitators

Capacitation of facilitators is the application of methods that promote self-directed learning in students to prepare them for work-based continuing professional development and life-long learning to meet the demands of the rapidly changing world of work. Facilitators focusing on facilitation of learning rather than mostly lecturing would assist in promoting student participation in the learning process and engagement in SDL (Guglielmino, 2013:3; Grow, 1990:133).

5.5 RECOMMENDATIONS FOR FUTURE RESEARCH

Future research may replicate the study in more than one nursing college to generalize the results to a wider population. The impact of the four-year nursing training, as a possible influence on the level of self-directed learning readiness of nursing students, could be determined by conducting a study in the same cohort from their first to fourth years of study. The self-directed learning capacity of lecturers was not determined because the study's aim was to determine the level of self-directed learning readiness of students only. However the level of SDL of students may be influenced by the capacity of their lecturers to promote SDL in students. Factors that influence the high or low levels of readiness for self-directed learning may be explored.

5.6 DISSEMINATION OF RESEARCH RESULTS OR FINDINGS

As suggested in the ethical clearance communication, the final report will be submitted to the HREC when approved through the assessment process. The Gauteng Department of Health (GDoH), the college where the study was conducted, as well as the library would be provided with copies according to the permission agreements entered into with the stakeholders. The authors of the instrument will be provided with the outcome and report about the study as agreed when permission to utilize the instrument was granted. The researcher intends to publish a paper, with a potential to present in workshops and conferences when successful in the assessment of the thesis.

5.7 CONCLUSION

The dynamic nature of health care and nursing practice compels nurses to deal with the rapid changes taking place in health information and systems. It is the responsibility of nursing education institutions to ensure that nursing students who graduate from nursing education and training demonstrate fitness for practice at the end of four years, leading to registration as a nurse. The SANC is considering a requirement for nurses to renew their practising licences annually after demonstrating that they have undertaken continuing professional development. This necessitates their having the skills for self-directed learning to engage successfully in CPD and become lifelong learners. The need to improve the quality of care and prepare the future generation of responsive nurses requires supporting students to become critical thinkers who are aware of the dynamic information world.

It is important to balance facilitator and student directed learning, to acknowledge that self-directed learning exists in a continuum. Nursing education programmes are undertaken to promote lifelong learning through to maintain practitioner competencies, thus the implementation of transformative educational strategies is vital for effective student learning.

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APPENDICES

APPENDIX 1: ETHICAL APPROVAL FROM STELLENBOSCH UNIVERSITY

UNIVERSITEIT·STELLENBOSCH·UNIVERSITY
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Approval Notice
Response to Modifications- (New Application)

26-Aug-2016
Mohoaduba, Princess PL

Ethics Reference #: S16/03/049

Title: **Self-directed learning readiness of nursing students in their fourth year of study in a public nursing college in Gauteng.**

Dear Mrs Princess Mohoaduba,

The **Response to Modifications -** *(New Application)* received on **29-Jun-2016**, was reviewed by members of **Health Research Ethics Committee 2** via Expedited review procedures on **26-Aug-2016** and was approved.
Please note the following information about your approved research protocol:

Protocol Approval Period: **26-Aug-2016 -25-Aug-2017**

Please remember to use your **protocol number** **(S16/03/049)** on any documents or correspondence with the HREC concerning your research protocol.

Please note that the HREC has the prerogative and authority to ask further questions, seek additional information, require further modifications, or monitor the conduct of your research and the consent process.

After Ethical Review:
Please note a template of the progress report is obtainable on www.sun.ac.za/rds and should be submitted to the Committee before the year has expired. The Committee will then consider the continuation of the project for a further year (if necessary). Annually a number of projects may be selected randomly for an external audit.
Translation of the consent document to the language applicable to the study participants should be submitted.

Federal Wide Assurance Number: 00001372
Institutional Review Board (IRB) Number: IRB0005239

The Health Research Ethics Committee complies with the SA National Health Act No.61 2003 as it pertains to health research and the United States Code of Federal Regulations Title 45 Part 46. This committee abides by the ethical norms and principles for research, established by the Declaration of Helsinki, the South African Medical Research Council Guidelines as well as the Guidelines for Ethical Research: Principles Structures and Processes 2004 (Department of Health).

Provincial and City of Cape Town Approval

Please note that for research at a primary or secondary healthcare facility permission must still be obtained from the relevant authorities (Western Cape Department of Health and/or City Health) to conduct the research as stated in the protocol. Contact persons are Ms Claudette Abrahams at Western Cape Department of Health (healthres@pgwc.gov.za Tel: +27 21 483 9907) and Dr Helene Visser at City Health (Helene.Visser@capetown.gov.za Tel:

APPENDIX 2: PERMISSION OBTAINED FROM INSTITUTIONS / DEPARTMENT OF HEALTH

GAUTENG PROVINCE

Enquiries: Ms. N. Ntsele

Tel. 0119833009

E- mail: Nompi.ntsele@gauteng.gov.za

12 October 2016

Ms. Lindiwe Mohoaduba

Ann Latsky Nursing College

1 Plunket Road

Auckland Park

Dear Ms. Mohoaduba

RE - APPLICATION TO CONDUCT A RESAERCH PROJECT AT COLLEGE

Your letter dated 12 October 2016 refers.

Permission has been granted for you to conduct a research project titled:

SELF-DIRECTED LEARNING READINESS OF NURSING STUDENTS IN THEIR FOURTH YEAR OF STUDY IN A PUBLIC NURSING COLLEGE IN JOHANNESBURG, GAUTENG PROVINCE, SOUTH AFRICA.

Nursing college requests that you participate in the college research days for the purpose of presenting the different stages of your research project. You are also requested to inform the college the name of the journal where the completed research project will be published. The college will appreciate if you would kindly donate a copy of the completed research project document to Chris Hani Baragwanath Nursing College Library.

Regards

Nompi Ntsele (Mrs.)

Principal: C

APPROVED

COLLEGE PRINCIPAL
Mrs N. Ntsele

Date: 12/10/2016

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APPENDIX 3: PARTICIPANT INFORMATION LEAFLET AND DECLARATION OF CONSENT BY PARTICIPANT AND INVESTIGATOR

PARTICIPANT INFORMATION LEAFLET AND CONSENT FORM

TITLE OF THE RESEARCH PROJECT:

Self-directed learning readiness of nursing students in their fourth year of study in a public nursing college in Johannesburg, Gauteng province. South Africa.

REFERENCE NUMBER: S16/03/049

PRINCIPAL INVESTIGATOR: Princess Lindiwe Mohoaduba

ADDRESS: 1903 Fielding Crescent, Mondeor, Johannesburg

CONTACT NUMBER: 083 453 3284

Dear Participant

You are being invited to take part in a pilot study towards a research project. Please take some time to read the information presented here, which will explain the details of this project. Please ask me any questions about any part of this project that you do not fully understand. It is very important that you are fully satisfied that you clearly understand what this pilot study towards a research study entails and how you could be involved. Also, your participation is **entirely voluntary** and you are free to decline to participate. If you say no, this will not affect you negatively in any way whatsoever. You are also free to withdraw from the pilot study at any point, even if you had agreed to participate.

This study has been approved by the **Health Research Ethics Committee at Stellenbosch University** and will be conducted according to the ethical guidelines and principles of the international Declaration of Helsinki, South African Guidelines for Good Clinical Practice and the Medical Research Council (MRC) Ethical Guidelines for Research.

What is this pilot study for a research study all about?

The pilot study aims to test the research instrument for appropriateness and to refine the process of research. The results of the pilot study will be included in the study if there has been no major change in the instrument during the pilot study.

The research study seeks to explore and describe the level of readiness for self-directed learning of fourth year nursing students in the four-year diploma programme using a self-directed learning readiness scale that measures the ability of the students to take the initiative and responsibility for their own learning.

Where will the pilot study be conducted; are there other sites; total number of participants to be recruited at your site and altogether.

The pilot study will be conducted at a public nursing college only with 10% (n=10) of the students in the fourth year of study in the college who will be invited to participate in the pilot study.

Explain in participant friendly language what your project aims to do and why you are doing it?

Nursing education institutions are tasked to prepare the students to be graduates with the capability to take on the constant changing and challenging roles required in the nursing profession. Nurse graduates are required to engage in lifelong learning. Self-directed learning capability is required to be a lifelong learner. The aim of this study is to assess the level of readiness for self-directed learning of the fourth year nursing students in the four-year diploma programme. The results of the study would assist nurse educators to design and implement facilitation strategies that support and improve students' self-directed learning readiness.

Explain all procedures.

- The students will complete a self-administering 5-point Likert scale questionnaire.

Why have you been invited?

You have been invited because you are a fourth year student at a public nursing college .

What will your responsibilities be?

Your responsibilities will be to read all the questionnaire items thoroughly and respond honestly.

Will you benefit from taking part in this research?

There will be no benefits for you, however, the results from this study will provide nurse educators with information to design and implement teaching strategies to assist students to develop their self-directed learning abilities.

Are there in risks involved in your taking part in this research?

There are no risks for you associated with taking part in this study.

Confidentiality

- Your name or student number is not requested in the questionnaire, to protect your personal identity.
- The information provided by you will be kept confidential, used for research purposes only and presented as group information only.
- The researcher, the supervisor, the statistician and the examiners will have access to the information.
- The institution will be pseudo named: public institution CHB to ensure confidentiality

Will you be paid to take part in this study and are there any costs involved?

You will not be paid to take part in the study and there will be no costs involved for you, if you do take part.

Is there anything else that you should know or do?

- You can contact Princess Lindiwe Mohoaduba at tel: 083 453 3284 if you have any further queries or encounter any problems.
- You can contact the Health Research Ethics Committee at 021-938 9207 if you have any concerns or complaints that have not been adequately addressed by the researcher.
- You will receive a copy of this information and consent form for your own records.

Declaration by participant

By signing below, I ……..… agree to take part in a pilot study towards a research project entitled: Self-directed learning readiness of nursing students in their fourth year of study in a public nursing college in Johannesburg, Gauteng province. South Africa.

I declare that:

- I have read or had read to me this information and consent form and it is written in a language with which I am fluent and comfortable.
- I have had a chance to ask questions and all my questions have been adequately answered.
- I understand that taking part in this study is **voluntary** and I have not been pressurised to take part.
- I may choose to leave the study at any time and will not be penalised or prejudiced in any way.

Signed at (*place*) .....….....on (*date*…...……2016

....
Signature of participant **Signature of witness**

Declaration by investigator

I *(name)* ……..…….. declare that:

- I explained the information in this document to

  …….
- I encouraged him/her to ask questions and took adequate time to answer them.
- I am satisfied that he/she adequately understands all aspects of the research, as discussed above.
- I did not use an interpreter.

Signed at (*place*)
.....….....……..on(*date*)....……2016.

…… ……
Signature of investigator **Signature of witness**

APPENDIX 4: INSTRUMENT

Instructions

Thank you for participating in this study. Please read all the instructions carefully and answer all the questions as honestly as you can, ensuring not to leave any questions unanswered. On completion of the questionnaire, return it in the envelope attached.

Your cooperation is greatly appreciated. All information gathered is anonymous and will be kept confidential.

If you need any assistance please contact me on the number below:

Name: Princess Lindiwe Mohoaduba
Contact details: 083 453 3284
e-mail: lmohoaduba@gmail.com
Or
Supervisor: Mrs A. Damons (SU)
Contact details: damonsa@sun.ac.za

SECTION A

Demographic Data:

1. **Age in years**:_____years

Please tick the correct answer:

2. **Gender:** Male ☐ Female ☐

3. **Dependants:** No children ☐ 1-2 children ☐ >2 children ☐

4. **Highest Qualifications:**

Certificate ☐ Diploma ☐ Degree ☐

Advanced/Higher Diploma ☐ Master's degree ☐

Other ☐ Specify:_____

SECTION B

SELF-DIRECTED LEARNING READINESS SCALE (for Nurses)

(Fisher, King & Tague, 2001)

The following is a bank of items perceived to reflect the attributes, skills and motivational factors required of self-directed learners.

Please evaluate each item regarding **the degree the item measures a characteristic of yourself**. You are required to assess each item using a 5-point Likert scale as follows:

Please Circle

1. **if you "strongly disagree" that the item measures a characteristic of yourself**
2. **If you "disagree" that the item measures a characteristic of yourself**
3. **If you are "unsure" that the item measures a characteristic of yourself.**
4. **If you "agree" that the item measures a characteristic of yourself**
5. **If you "strongly agree" that the item measures a characteristic of yourself**

(SD = strongly disagree, D = disagree, A = agree, SA = strongly agree)

B1. Self-management

ITEMS	SD 1	D 2	U 3	A 4	SA 5
1. I solve problems using a plan	1	2	3	4	5
2. I prioritize my work	1	2	3	4	5
3. I do not manage my time well	1	2	3	4	5
4. I have good management skills	1	2	3	4	5
5. I set strict time frames	1	2	3	4	5
6. I prefer to plan my own learning	1	2	3	4	5
7. I am systematic in my learning	1	2	3	4	5
8. I am able to focus on a problem	1	2	3	4	5
9. I need to know why	1	2	3	4	5
10. I critically evaluate new ideas	1	2	3	4	5
11. I prefer to set my own learning goals	1	2	3	4	5
12. I learn from my mistakes	1	2	3	4	5
13. I am open to new ideas	1	2	3	4	5

PLEASE TURN OVER

(SD = strongly disagree, D = disagree, A = agree, SA = strongly agree)

B2. Desire for learning

ITEM	SD 1	D 2	U 3	A 4	SA 5
1. When presented with a problem I cannot resolve, I ask for assistance	1	2	3	4	5
2. I am responsible	1	2	3	4	5
3. I like to evaluate what I do	1	2	3	4	5
4. I have high personal expectations	1	2	3	4	5
5. I have high personal standards	1	2	3	4	5
6. I have high beliefs in my abilities	1	2	3	4	5
7. I am aware of my own limitations	1	2	3	4	5
8. I am confident in my ability to search out information	1	2	3	4	5
9. I do not enjoy studying	1	2	3	4	5
10. I have a need to learn	1	2	3	4	5
11. I enjoy a challenge	1	2	3	4	5
12. I want to learn new information	1	2	3	4	5

B3. Self-control

1. I enjoy learning new information	1	2	3	4	5
2. I set specific times for my study	1	2	3	4	5
3. I am self-disciplined	1	2	3	4	5
4. I like to gather the facts before I make a decision	1	2	3	4	5
5. I am disorganised	1	2	3	4	5
6. I am logical	1	2	3	4	5
7. I am methodical	1	2	3	4	5
8. I evaluate my own performance	1	2	3	4	5
9. I prefer to set my own criteria on which to evaluate my performance	1	2	3	4	5
10. I am responsible for my own decisions/actions	1	2	3	4	5
11. I can be trusted to pursue my own learning	1	2	3	4	5
12. I can found out information for myself	1	2	3	4	5
13. I like to make decisions for myself	1	2	3	4	5
14. I prefer to set my own goals	1	2	3	4	5
15. I am not in control of my life	1	2	3	4	5

Thank you for completing this survey!!

Appendix 5: Permission for use of an instrument

THE UNIVERSITY OF SYDNEY

PERMISSION TO USE THE SELF-DIRECTED LEARNING READINESS SCALE FOR NURSE EDUCATION

FROM: Murray Fisher, PhD, DipAppSc, BHSc, MHPEd.
Associate Professor
Faculty of Nursing and Midwifery
University of Sydney
murray.fisher@ sydney.edu.au

RE: Use of the **Self-Directed Learning Readiness Scale for Nurse Education**

You are free to use the Self-Directed Learning Readiness Scale for Nurse Education for your research. The instrument is copyrighted (c. 2001, Fisher, King & Tague) and may not be duplicated or copied without first submitting a signed copy of this permission form to M Fisher. Requests for any changes or alterations to the instrument should be made in writing to M Fisher. As with all revisions, the copyright will be retained by Fisher, King & Tague and must appear on the printed copies of the instrument.

By filling in your name, address, phone number, and e-mail address and signing the agreement use below and mailing it to M Fisher, you are hereby given permission to use the Self-Directed Learning Readiness Scale for Nurse Education for your research. The permission is valid only for the study named below.

Fisher, King & Tague requests that you send back the following information:

- your raw data in ASCII format for our reliability and validity bank
- copies of any changes or translations of the scale
- copies of any publications citing the use of the scale

When using the Self-Directed Learning Readiness Scale for Nurse Education you need to use the following two references:

Fisher, M., King, J. & Tague, G. (2001) Development of a self-directed learning readiness scale for nurse education. Nurse Education Today, 21(7): 516-525.

Fisher, M.J. & King, J. (2010) The Self-Directed Learning Readiness Scale for Nursing Education revisited: A confirmatory factor analysis. *Nurse Education Today*, 30(1): 44-48.

APPENDIX 6: DECLARATIONS BY LANGUAGE AND TECHNICAL EDITORS

Writing... promotional / humour / travel / political / commentary / research...
Speech-Writing... Creative Writing training ... Book editing & indexing... Media design

JAMES MITCHELL
& ASSOCIATES

39 Athol Village,
115 Dennis Road,
Athol, Sandton 2196
Gauteng, South Africa
25 August 2017

TO WHOM IT MAY CONCERN

This is to certify that the Thesis entitled

Self-directed learning readiness of nursing students
in their fourth year of study in a public nursing college
in Johannesburg, Gauteng Province, South Africa

and submitted in partial fulfilment of the requirements for the degree of

Master of Nursing Science

at the Faculty of Medicine and Health Sciences at Stellenbosch University by

Princess Lindiwe Mohoaduba

has been professionally edited by the undersigned
JAMES HOWARD MITCHELL.

Cell: 082-773-2700 Skype: james.howard.mitchell E-mail: james.mitchell45@yahoo.com

Writing... promotional / humour / travel / political / commentary / research...
Speech-Writing... Creative Writing training ... Book editing & indexing... Media design

JAMES MITCHELL
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39 Athol Village,
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27 November 2017

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has been professionally re-edited, with additional material, by the undersigned

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(Signed)

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Appendix 7: Turnitin report